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Gleanings

in

Bee Culture



"And now, when comes the calm mild day,
as still such days will come,
To call the squirrel and the bee
from out their winter home;
When the sound of dropping nuts is heard,
though all the trees are still,
And twinkle in the smoky light
the waters of the rill,
The south wind searches for the flowers
whose fragrance late he bore,
And sighs to find them in the wood
and by the stream no more."

—William Cullen Bryant.

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Gentlemen: Send me postpaid your free booklet and Factory-to-User offer.

Name

Town

State..... RFD or Box.....

Dear Mr. Beekeeper:

You are probably thinking of getting your next season's supplies so that you can get them made up while you are sitting by the fire this winter. With additional help and an extra large stock of Root Quality supplies on hand, we are prepared, as never before, to give the beekeepers of this territory the best possible service. Send us list of your next season's wants and let us quote you prices.



*A. I. Root Company
of Syracuse, N. Y.*

1631 West Genesee St.



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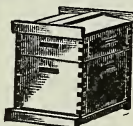
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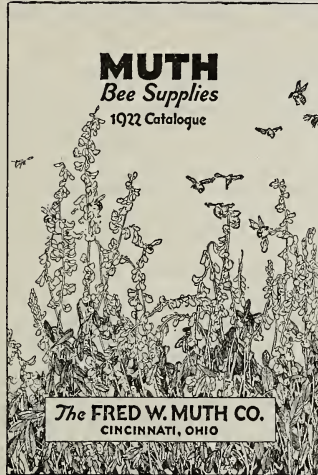
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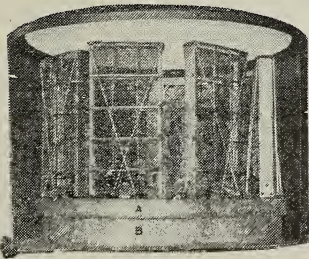


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A—Pan over machinery. B—Bottom of tank.

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Sections, 1 $\frac{1}{8}$, No. 1...\$10.00 per 1000
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Standard Hoffman frames,
9 $\frac{1}{8}$ deep\$4.50 per 100
Unspaced wedged top-bar frames,
9 $\frac{1}{8}$ deep.....\$2.75 per 100

Send for Catalog and Price List.

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146 Newton Avenue N. and
159 Cedar Lake Rd.
MINNEAPOLIS, MINN.

HONEY MARKETS

U. S. GOVERNMENT MARKET REPORTS. Information from Producing Areas (First Half of October.)

CALIFORNIA POINTS.—Colonies generally in good condition for winter. Nectar yield from alfalfa reported unusually light. Demand and movement of honey barely moderate, with relatively few inquiries for carlots. Market firm, and many beekeepers and shippers reported holding for higher prices, expecting a general advance due to the tariff. Carlots for outside shipment range per lb. as follows: White orange 10-10½c, one car reported sold locally at 9c; white sage, 8¼-8¾c, 1 car 9¼c; light amber sage 6½-7c, light amber alfalfa 6¼-6½c. Beeswax, cash to growers, 20c per lb. White Hawaiian honey offered at 7c per lb. f. o. b. San Francisco. Few sales No 1 star thistle honey reported from northern California at 8c per lb.

INTERMOUNTAIN REGION.—Colonies generally said to be in good condition for winter. With advent of cooler weather, demand for honey, both comb and extracted, has increased. Numerous carlot shipments of comb reported and several of extracted. Comb crop in Colorado said to be much heavier than that of last year. It is reported that the carlot comb price declined 20-25% during late September and early October, and carlot sales reported at \$3.00-3.15 per 24-section case. Other carlot sales in Colorado and Montana reported at \$3.75-3.85 per case. Extracted honey seems to be firm. Carlot sales of white sweet clover and alfalfa reported from Colorado and eastern Washington at 8-8½c per lb, with 1 c. l. sales at 8½-10c. Some beekeepers said to be selling to near-by dealers at 7-7½c for white extracted in 5-gal. cans, and low as \$2.75 per case for carlots of white comb. Average yellow beeswax selling at 23-25c per lb. In Arizona honey sales from the small mesquite crop reported at 7½-8½c per lb. Crop from cotton now filling up hives for winter. Beekeepers generally inclined to hold alfalfa and cotton honey, but several carlot sales reported at 5½-6c per lb.

TEXAS POINTS.—In localities where local rains fell in September, hives are in fair condition so far as young bees and winter stores are concerned. In other localities stores and bees are light in numbers. Long drouth said to have been instrumental in producing the large number of failing queens reported. Demand for honey improving. Some sales reported of light amber in 2/60s at 7½c per lb., and chunk comb, 6/10s at 13½c per lb.

EAST AND NORTH CENTRAL STATES.—Fall flow from goldenrod and aster has been good in some sections; in others it has been curtailed by lack of rain. Beekeepers fear that extremely dry fall will be damaging to next year's clover crop. Many colonies short of stores and beekeepers are feeding sugar syrup for winter. Some colonies said to be still rearing brood. Improvement noted in demand and movement of honey, although still only moderate. Carlot sale of extracted white clover reported at 10½c per lb., with less-than-carlot sales at 11-12c. Amber honey selling down to 8c per lb. Most beekeepers reported selling No. 1 white comb at 20c per section.

PLAINS AREA.—Colonies strong but many are reported light in stores owing to shortage of fall honey and heavy brood-rearing. Ground dry and prospects therefore not good for 1923 crop. Increase noted in several sections in Hubam clover acreage. Hubam said to be still yielding nectar heavily. One large beekeeper reports an average yield for colonies near Hubam fields of 260 lbs., two and a half times that of other colonies. Numerous individual yields of 275 lbs. reported. Carlot sales extracted white clover reported at 9c and 10½c per lb., with small-lot sales at 12-12½c per lb. Comb honey seems to be selling slowly around 20c per section, with sales by small farmers reported low as \$3.00 per case.

NORTHEASTERN STATES.—Honey plants hurt by September drouth, and fall flow has been very light. Recent rains will help clover for next season. Considerable feeding will be necessary to keep bees over winter. Demand improving, but

few large lot sales reported. One carlot sale reported of buckwheat in 160-lb. kegs at 8c per lb. Retail sales of honey show a considerable growth in some sections, but roadside selling considered not so good as last year. Small orders for white clover have practically exhausted supplies of some beekeepers already.

WEST INDIES: Porto Rico.—Sales to United States very light as shippers are holding for 65-70c per gal., which closely approaches the New York wholesale price of 70-75c per gal. Cuba.—Prices show slight advance. One large shipment to Holland reported at 62c per gal., cost and freight included. 4½c per lb. is the quoted f. o. b. extracted price, while beekeepers are being paid 3½c per lb.

Telegraphic Reports from Important Markets.

BOSTON.—Freight receipts equivalent to 1½ cars Porto Rico via New York and 70 cases comb by express from New York state arrived. Moderate demand for both comb and extracted, with prices unchanged. Comb: Sales to retailers: New York, 24-section cases white clover \$6.00-6.50. Vermont, 20-section cases best heavy white clover \$5.50-6.00, light \$4.50-5.00; 24-section cases white clover best carton stock \$6.50-7.00. Extracted: Receivers sales to confectioners and bottlers in 10-package lots or more, per lb., Porto Rico, amber 8½-9c. California, white sage 14-16c, light amber sage 12-14c.

CHICAGO.—Since last report 1 car Idaho, 1 car Colorado, 6,000 lbs. Iowa, 12,000 lbs. Wisconsin, 4,000 lbs. Wyoming and 2,000 lbs. Illinois arrived. Demand and movement moderate, market generally steady with a slightly firmer undertone in some quarters. Extracted: Sales to bottlers, confectioners and wholesale bakers, per lb., Colorado and Idaho, sweet clover and mixed sweet clover and alfalfa white 10-10½c, few sales 11c, light amber 8½-9c, few sales rather poor stock 7½c; Illinois, white sweet clover 10½-11c; Wisconsin and Iowa, mixed clovers white 11-12c. Comb: Sales to retailers, 24-section cases Idaho, Colorado and Wyoming, white sweet clover and mixed sweet clover and alfalfa No. 1, heavy \$4.00-4.25; No. 2, \$3.00-3.75. Wisconsin, white clover and extra fancy No. 1, mostly \$4.75-5.00; most sales No. 1, \$4.00-4.50. Beeswax: Receipts moderate. Demand and movement moderate, market firm. Sales to laundry supply houses and wholesale drug houses, domestic, light 31-33c, dark around 28c. Cuba and Central America, light 29-30c, dark 20-26c.

KANSAS CITY.—No carlot arrivals since last report. Supplies moderate. Demand and movement moderate, market steady. Sales to jobbers: Extracted: Montana, white alfalfa, 12c per lb. Comb: 24-section cases Montana and Nevada, white alfalfa No. 1 heavy new stock, \$4.25-4.75. Missouri, 24-section cases heavy white clover No. 1, new crop \$5.00-5.50.

NEW YORK.—Domestic and foreign receipts and supplies limited. Demand limited, market steady. Extracted: Spot sales to jobbers, wholesalers, confectioners, bakers and bottlers, domestic per lb., California, light amber alfalfa, none on market; white sage 10-11c, white orange 11½-12½c, few high as 13c. Intermountain section, white sweet clover 10-11c, few sales 12c. New York, white clover 9½-10½c, few sales high as 11½c. South America and West Indies, refined 70-75c per gal. Beeswax: Foreign receipts and supplies moderate. Demand moderate, market steady. Spot sales to wholesalers, manufacturers and drug trade: South American and Chili, light 26-28c, few 29c, darker 24-26c; Brazil, light 25-28c, few 30c, darker low as 21c. West Indies, light, best 26-28c, darker low as 20c. Africa, dark 18-21c.

PHILADELPHIA.—Extracted: Supplies generally light but demand has been only fair. Market firm due principally to tariff duties on foreign stock. Sales to jobbers, Florida, various flavors light amber 88c, amber 79c per gal. Beeswax: Supplies of imported stock rather liberal, and with only a fair demand market has been barely steady with no change in prices. Sales to manufacturers, ner lb., Africa, dark 21-22c. Brazil, light 26-27c, Chili, 27-28c.

ST. LOUIS.—During past month 1 car Colorado arrived. Demand improving, market steady. No sales to jobbers reported. Sales direct to retailers. Comb: in 24-section cases, Colorado, white

clover \$5.00-5.50. Extracted: Per lb., Missouri. light amber 8-10c. Beeswax: No receipts reported since last report. No change in market. Practically no demand or movement, market dull. Ungraded average country run, 25c per lb.

H. C. TAYLOR,
Chief of Bureau of Markets.

From Producers' Association.

The marketing of comb honey in carlots has been as satisfactory as could be desired. The extracted honey situation is not as satisfactory. Evidently the mild weather, which has prevailed longer than usual, and the large amount of fresh fruit available this season account to some extent for the lack of interest displayed by carlot buyers of extracted honey. As the new tariff of three cents per pound is now in effect, the beekeepers should be able to derive some benefit from it.

The Opinions of Honey Producers Themselves as Reported to Gleanings in Bee Culture.

Early in October we sent to actual honey producers the following questions:

- 1. How does the total honey crop for 1922 compare with that of 1921 for your locality? Give answer in per cent.
- 2. What per cent of the honey produced in your locality has already left the hands of the producers?
- 3. How does the number of colonies that will go into winter quarters compare with that of last year? Give answer in per cent.
- 4. What is the condition of the colonies compared with normal as to (a) number and age of bees? (b) stores for winter? Give answer in per cent.

We are looking for an active demand for strictly first-class white bottling honey, as the supply of this kind of stock is not excessive.

The Colorado Honey Producers' Ass'n.
Denver, Colo. F. Rauchfuss, Secretary.

The A. I. Root Company's Quotation.

Since our last quotation we have paid the following prices in carlots f. o. b. shipping points: Water white extracted white clover, from local producers, with low freight rate, 10 1/2c per pound; western white to water white sweet clover and alfalfa, 8c; western light amber, 6c; white sweet clover or alfalfa comb honey, fancy, \$3.75 per case; No. 1, \$3.50, and No. 2, \$3.25. These comb-honey prices are based on the following prices f. o. b. Medina: Fancy, \$4.50; No. 1, \$4.25, and No. 2, \$4.00. Our immediate requirements have been cared for.

- 5. What is the condition of the honey plants for next season as compared with normal? Give answer in per cent.
- 6. At what prices is honey being sold in large lots (carload or entire crop) at the producer's station? (a) Extracted honey per pound? (b) Comb honey, fancy and No. 1 per case?
- 7. What are prices to grocers in lots of one to five cases? (a) Extracted honey in 5-lb. pails or other retail packages? (b) Comb honey, fancy or No. 1 per case?
- 8. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid.

The answers as returned by our honey and bee reporters are as follows:

State.	Reported by:	Crop.		No. Colo.	Bees.		Colo. Cond.	In large lots.		To Grocers.	Movement.
		Yield.	Sold.		Stores.	Plants.		Ext.	Comb.		
Ala.	J. M. Cutts.....	...	...	100	100	85	75	...	...	...	...
Ark.	J. Johnson.....	50	50	100	...	...	75	\$4.80	...	\$5.00	Slow
B. C.	W. J. Sheppard.....	200	25	150	...	...	100	\$2.20	...	\$1.25	...
Cal.	M. C. Richter.....	20	60	80	80	80	...	.08	...	1.15	Fair
Cal.	G. Larinan.....	150	40	100	...	...	...	.08	...	...	Fair
Cal.	M. A. Saylor.....	100	50	100	...	100	.08	3.60	60	...	Fair
Colo.	J. A. Green.....	75	20	110	110	95	110	3.15	.65	4.00	Slow
Colo.	B. W. Hopper.....	100	20	100	...	75	.09	4.00	.65	4.00	Slow
Conn.	A. Latham.....	110	80	105	...	125	12	5.75	...	...	Fair
Fla.	C. C. Cook.....	100	25	100	...	100	.08	...	.65	...	Fair
Fla.	H. Hewitt.....	200	50	110	100	100	.08	...	.65	...	Fair
Fla.	W. Lamkin.....	200	50	100	100	100	.08	...	.75	...	Slow
Ga.	J. F. Wilder.....	120	80	115	100	100	10	4.25	.80	4.50	Fair
Ill.	C. F. Bender.....	120	75	115	90	110	70	...	...	4.80	Good
Ill.	A. L. Kildow.....	150	5	115	...	25	10	4.25	.75	5.00	Slow
Ind.	T. C. Johnson.....	125	25	100	...	100	...	...	.80	5.00	...
Ind.	E. S. Miller.....	75	25	90	100	110	90	...	.80	4.80	Slow
Ind.	J. Smith.....	50	50	100	...	75	...	...	...	...	Slow
Iowa.	E. G. Brown.....	110	50	110	120	80	80	.09	.75	5.00	Fair
Iowa.	F. Coverdale.....	200	80	125	...	100	...	4.75	.75	5.00	Slow
Iowa.	W. S. Pangburn.....	600	...	100	100	95	...	5.00	.75	5.00	Fair
Kan.	J. A. Nininger.....	110	10	120	130	130	100	...	.75	5.00	...
Kan.	C. D. Mize.....	110	20	100	110	120	100	...	.70	5.50	Fair
Ky.	P. C. Ward.....	100	90	100	...	60	...	...	1.00	...	Fair
Me.	O. B. Griffin.....	10	35	90	...	100	...	...	...	7.20	Slow
Md.	S. G. Crocker, Jr.....	100	50	125	...	75	...	5.25	1.00	...	Slow
Mass.	O. M. Smith.....	25	5	100	125	50	...	...	...	...	...
Mich.	I. D. Bartlett.....	100	25	100	100	65	100	10	.75	4.80	Slow
Mich.	L. S. Griggs.....	90	50	100	100	60	125	10	5.40	.75	Fair
Mo.	J. H. Fisbeck.....	400	1	100	100	130	85	...	...	...	Slow
Mo.	J. W. Romberger.....	100	50	110	100	100	75	4.25	.75	5.00	Fair
N. Y.	Adams & Myers.....	125	33	125	100	75	125	...	.60	6.00	Fair
N. Y.	F. W. Lesser.....	40	10	110	100	90	120	10	...	4.80	Slow
N. C.	C. S. Bumgarner.....	...	100	100	100	100	90	...	...	...	Fair
Ohio.	R. D. Hiatt.....	50	60	120	...	...	...	...	1.00	5.50	...
Ohio.	J. F. Moore.....	80	30	110	...	90	...	...	.80	4.80	Slow
Okla.	J. Heuelsen.....	100	10	90	75	100	70	...	.75	...	...
Okla.	C. F. Stiles.....	150	65	95	...	75	...	...	.80	5.00	Fair
Ore.	E. J. Ladd.....	150	10	100	...	100	...	...	...	3.50	Slow
Ore.	H. A. Scullen.....	125	50	100	...	100	11	...	.80	...	Fair
Pa.	H. Beaver.....	80	...	90	...	70	10	...	.65	4.50	Fair
Pa.	D. C. Gilham.....	80	5	110	100	60	80	...	1.05	7.20	Slow
Pa.	G. H. Rea.....	30	50	100	75	75	50	...	...	6.00	Slow
R. I.	A. C. Miller.....	75	10	100	100	110	100	...	1.25	...	Fair
Tex.	T. A. Bowden.....	25	50	100	...	...	...	...	.75	...	Slow
Tex.	H. B. Parks.....	25	50	100	75	66	...	.08	...	...	Slow
Utah.	M. A. Gill.....	100	30	120	...	80	.07	3.50	.50	4.00	Slow
Vt.	J. E. Crane.....	300	...	133	100	110	120	...	5.75	1.25	Slow
Va.	T. C. Asher.....	75	50	95	105	110	100	...	6.00	1.10	Fair
Wash.	G. W. York.....	90	75	80	85	95	80	.08	3.75	.65	Slow
Wash.	W. L. Cox.....	125	20	100	100	95	90	...	.90	5.00	Fair
Wis.	E. Hassinger, Jr.....	120	50	100	...	100	1185	...	Fair
Wis.	H. F. Wilson.....	90	25	100	100	50	100	12	4.75	6.75	Slow

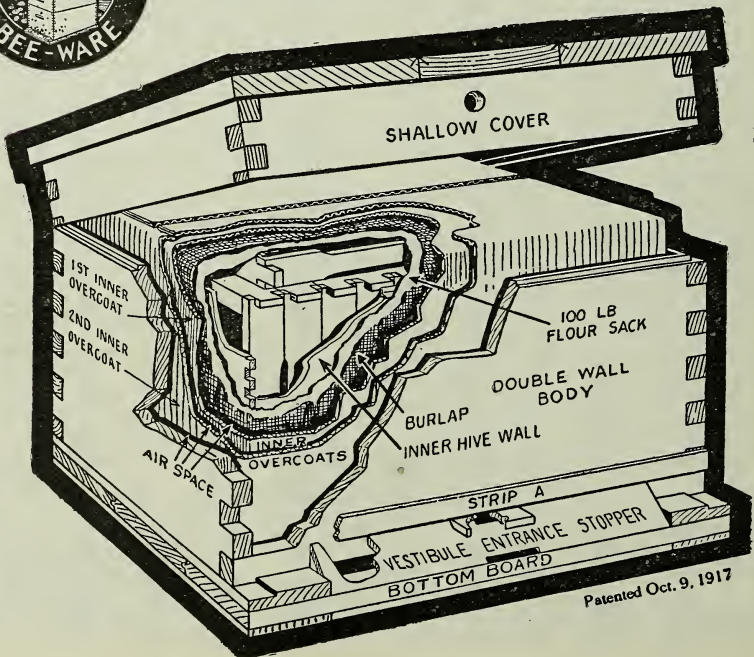
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2. **Larger Honey Crops are assured.** The bees are enabled to rear brood earlier in the spring, with no danger of chilled brood on account of cold snaps. One bee in March is worth one hundred in July.
3. **You will practically eliminate winter losses.** With your colonies in normal condition (that is, with plenty of good stores, a young queen and young bees) you will be able to winter practically 100%.
4. **The Inner Overcoat Hive will last a lifetime**, as the outer hive walls are the same thickness as in the single-wall hive. In other words, **WOODMAN Inner Overcoat Hives** are a lifetime investment—not an expense.
5. **Out-of-door Wintered Bees have many advantages over cellar-wintered bees.** They do not spring-dwindle and are stronger at the opening of honey flow.
6. **Insures Close-up protection.** A person may have any amount of blankets fastened up to the wall of his room and still freeze to death if left in the center of the room without close-up protection or insulation. The close-up protection in the **Inner Overcoat Hive** is what does the trick.

5 one-story regular depth hives, \$25.00: Jumbo depth, \$27.50

Special circular on **WOODMAN'S Protection Inner Overcoat Hive**, showing 10 large illustrations, sent on request.

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With Hoffman frames, nails, rabbets.

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Standard size, crate of 5, K. D., 10-fr..... 5.30
Jumbo size, crate of 5, K. D., 10-fr..... 6.20

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Standard size100, \$4.70; 500, \$22.00
Shallow100, 3.90; 500, 19.00
Jumbo100, 5.20; 500, 25.00

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SPECIAL PRICES!

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Medium5 lbs., 65c lb.; 50 lbs., 60c lb.
Thin Super.....5 lbs., 70c lb.; 50 lbs., 65c lb.

Comb Honey Supers

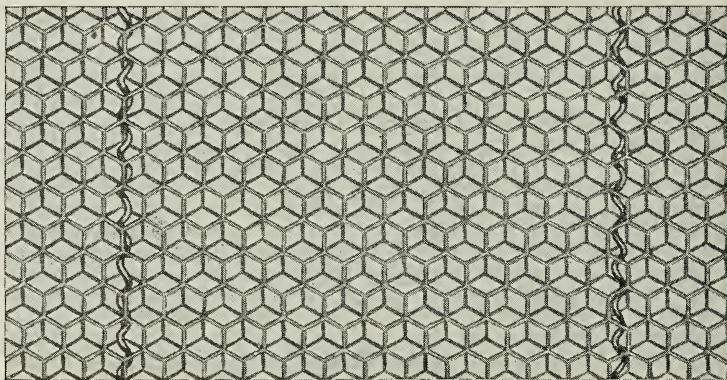
For 4x5x1 $\frac{3}{8}$ sections including section-holders, fence-
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Crate of five, K. D., 8-frame.....\$5.00
Crate of five, K. D., 10-frame..... 5.40

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WOODHAVEN, NEW YORK

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Wired Foundation

A YEAR OF USE completely upholds the claims which were made for Dadant's Wired Foundation, and beekeepers everywhere are enthusiastic in the great improvement which shows in their combs.

EVERY USER AN ADVERTISER.—Ask your neighbor who has tried Dadant's Wired Foundation how he likes it and we will need to say no more to you. His advertisement will be sufficient.

DADANT'S WIRED FOUNDATION may be used in new-style split bottom-bar frames or in the old-style one-piece bottom-bar frames with equal satisfaction. It is also adaptable to any size and style of brood or extracting frame.

COSTS NO MORE.—Since Dadant's Wired Foundation reduces the cost and labor of wiring, its extra price of three cents per pound above the catalog prices of old-style foundation is thus more than returned to the beekeeper.

ASK FOR SAMPLES.—A small mailing sample sent free on request. **Special Offer:** A sample of seven sheets, for either split bottom-bar or old-style one-piece bottom-bar frames will be sent, postpaid, to any address in the United States for \$1. Specify size desired. Only one sample to a person.

BEESWAX.—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Ia., or drop us a card and we will quote f. o. b. here or f. o. b. your own station, as you desire.

Wired Foundation is sold by all distributors of Lewis "Beeware" and Dadant's Foundation. Send them your orders.

Dadant & Sons, Hamilton, Illinois

GLEANINGS IN BEE CULTURE

NOVEMBER, 1922

PROF. H. F. WILSON, University of Wisconsin, Madison, Wis., reports that books



Donation of Books for the Miller Memorial Library.

are already being received for the Miller Memorial Library at the University of Wisconsin. Among the first books to be received is a shipment from Arthur C. Miller, Providence, R. I. Mr. Miller has donated his entire personal library of bee books consisting of several hundred volumes, many of which are rare, being out of print and only a few copies known to be in existence. In turning over these books to the Miller Memorial Library Mr. Miller is giving up the work of a lifetime of collection. This is indeed a splendid gift and an act which brings out the best in any person. No doubt many other beekeepers who have made a collection of bee books will follow the example of Arthur C. Miller. Others will no doubt make provisions in their wills for the turning over of their bee books to the Miller Memorial Library as suggested recently by Dr. E. F. Phillips. There is no better way for beekeepers to establish themselves in beekeeping history than to make similar donations to this Library. Prof. Wilson reports that the Library material is being cataloged and placed in separate files under lock and key as fast as it comes in. The Library will be available at all times to beekeeping students, but care will be taken to see that the books are not mistreated in any way or lost. Plans are being made to make this the greatest collection of beekeeping literature in the world.



NOW that the season for the winter meetings of beekeepers' associations is at hand,



Local Beekeepers' Organizations.

attention should be called to the value of local organizations, such as county organizations and organizations covering two or three counties. Many things can be accomplished in a local organization that cannot well be done in a state organization. In certain counties in California, for instance, beekeepers have organized local associations largely for the purpose of better disease control. In these organizations the members make a survey of their own neighborhood for disease, and report conditions to the organization. In

this way the local organization can co-operate with the inspector in running down disease. The control of bee diseases, the division of territory, marketing, and many other beekeeping problems can be better taken care of by an alert local association than when these things are done in a haphazard way.



BEEKEEPERS of the United States were especially favored by Uncle Sam's law-



Recent Legislation Affecting Beekeeping.

makers this year. Out of the thousands of bills introduced in the recent Congress, only about 1100 were passed, this being only a small percentage. Of these, two bills were passed to promote the beekeeping industry of the United States. The law relating to the importation of bees into the United States (the Isle of Wight disease bill) was approved on August 31. This law prohibits the importation of bees and queens except from countries known to be free from the Isle of Wight disease. The Fordney-McCumber Tariff Bill, approved on September 21, provides for a duty of three cents per pound on honey imported into the United States, instead of the import duty of 10 cents per gallon which had been in effect since the enactment of the 1913 Tariff Bill.



IN his report for the North, East, West and South Department in this issue, Prof. R. B.



Weather Forecast Service for Beekeepers in New York State.

Willson, Extension Specialist in Beekeeping in New York, announces the inauguration of a new service for beekeepers in that state. The weather predictions at the time for putting bees into the cellar will be watched with great care, and reports will be sent out by telegram to key men who will notify local beekeepers as to the best time for putting bees into the cellar. With the proper kind of co-operation on the part of the key men and beekeepers, this service should be of great value to those who winter their bees in the cellar in New York State. This service is similar to that which has been in operation in the fruit districts of New York

State for some time, by which fruit-growers are notified in advance of any unusual weather conditions such as frosts during the blooming period.

No doubt this service will be extended, and beekeepers will be notified in the spring when bees should be taken from the cellar. The Weather Bureau, being able to forecast the arrival of a good flight day for the bees, is in a position to tell the beekeepers in advance when to put the bees out in order that they may have a good flight within a day or so after being set out.

Honey production is more dependent upon weather conditions even than is agriculture. Beekeepers, as a rule, are close observers of weather conditions, for their living is largely dependent upon the weather. Those who have access to the daily weather maps, published by the Weather Bureau, should make a careful study of these maps. It is not difficult to learn to read these maps properly, and it is often of great value to beekeepers to know in advance what kind of weather may be expected within the next few days. The weather forecast given in the daily papers is not complete enough for the needs of the beekeeper. By a careful study of the weather map it is possible to learn what the weather will probably be for several days in advance.



SOME time this month bees that are to be wintered indoors will be put into their winter quarters. In some regions the proper time to put the bees in may



Putting Bees Into the Cellar.

come early in the month, while in other regions the best time for putting them away will no doubt be after the middle of the month. In no case should they be left out until December. It is easy enough to lay down a rule as to the exact time for putting the bees into the cellar but not at all easy to apply this rule. The rule that has been given again and again in the bee journals is to put the bees away immediately after their last good cleansing flight in November. If it were possible to forecast the weather for the entire month of November there would be no trouble in applying this rule. As it is, the best thing the beekeeper can do is to have everything in readiness to put the bees away early in the month, then wait until the bees have had a good cleansing flight.

In this connection it should be remembered that the bees usually do not fly freely on mild days immediately after they have settled down and become quiet for winter. Apparently it is necessary for them to be confined within their hive by bad weather for a week or two in order that they shall feel the need for a cleansing flight. Otherwise only a few bees will fly during mild days of early November. However, after they have been confined to their hives for a week or

two they become anxious for a flight, and if the right kind of day comes perhaps every bee of the colony goes forth in the sunshine at some time during the day.

The ideal condition, therefore, for putting bees away in the best possible condition is to have a couple of weeks of bad weather during the latter part of October and early in November followed by at least one day that is warm enough for a thorough cleansing flight. Fortunately, such a day nearly always comes some time in November, usually before the 20th. When it does come and the bees have had a good cleansing flight the temptation is to leave them out a week or two longer, hoping they will have another cleansing flight before confining them in the cellar, but apparently there is no advantage in leaving the bees out another week, even if a good flight day should come later. In fact, if the bees have enjoyed a thorough cleansing flight and are put into the cellar at the right time they should be better off in the cellar where they will remain quiet than if left outside to waste their energy in an additional cleansing flight, provided of course they are supplied with the best of stores so that they will not need another cleansing flight until they are set out in March or early April. Another mistake that is often made in putting bees into the cellar is that of putting them away early in November after they had had only a partial cleansing flight. As already pointed out above, apparently the bees must first endure some confinement by bad weather in order to put them in condition to desire a cleansing flight.

Usually the next day after the bees have had a thorough cleansing flight in November the weather turns cold, and this is the ideal time for putting the bees away. They should be carried into the cellar at once before the hives become covered with snow. A temperature of 35 to 40 degrees is ideal for carrying the bees into the cellar, and a cloudy day is better than a clear day for this work.



MANY beekeepers who sell their honey locally have printed on their labels "From



What the Law Requires on Labels.

the apiary of" or "Produced by." A number of inquiries

have come to this office recently asking if these same labels can be used when the beekeeper purchases honey from some one else to supply his market after his own crop has been sold. To state on the label that the honey is from the apiary of John Jones, if John Jones buys the honey from some one else would be misleading and in the eyes of the law no doubt would be construed as misbranding. Likewise to state that the honey was produced by John Jones when it was produced by some one else would be misleading and therefore contrary to law

in most states and for interstate shipment. All that is required by the Federal Pure Food Law and the various state pure food laws in regard to labeling is that the label shall tell the truth. Beekeepers who practice buying honey from others to sell after they have sold their own crop should not have on their labels the words "Produced by" or "From the apiary of." Where a beekeeper has built up a local market by supplying only a good grade of honey neatly put up, these words can be omitted from the label without loss of sales.



IN his excellent article, "Wintering in the Northwest," in the October issue of the



**Moisture Given
Off by Bees
During Winter.**

American Bee Journal, our venerable correspondent, J. E. Crane, discussing

the source of moisture within the hive during the winter, estimates that there will be about three pints of water exhaled by a normal colony of bees between November 1 and April 1, assuming that the colony consumed 17 pounds of honey in that time. In arriving at these figures evidently Mr. Crane took into consideration only the water content of the honey, which is usually about 20 per cent. In 17 pounds of honey this would be 3.4 pounds, or a little over three pints, assuming the water content of the honey to be 20 per cent.

This is not the only source of water when honey is consumed by the bees, for the remaining 80 per cent representing the sugar content of the honey is broken up or changed chemically into water vapor and carbon dioxide. Assuming the sugar content of the 17 pounds of honey mentioned above to be 13.6 pounds (this being 80 per cent of the total weight of the honey), this 13.6 pounds when decomposed by the bees results in a little over 8.6 pounds of water. This added to the 3.4 pounds of water which was not chemically combined in the honey gives a total of 12 pounds of water resulting from the consumption of 17 pounds of honey. In other words, the bees in consuming 17 pounds of honey must give off almost a gallon and a half of water.

Perhaps an easier way to remember this is to take 12 pounds of honey as a basis, this being approximately one gallon. When one gallon of honey is consumed by the bees they must give off approximately one gallon of water, which is given off in the form of water vapor. Of this one gallon of water about 2.4 pints represents the water content of the honey and the remaining 5.6 pints represents that which is produced by the decomposition of the sugar content of the honey.

Assuming that a colony of bees consumes 17 pounds of honey between November 1 and April 1, 151 days, this would mean

about 1/12 pint of water as the daily average given off by a colony of bees during this period. This water vapor apparently does no harm inside the hive unless it condenses on the combs or on the walls of the hive, causing the combs to mold and in some cases causing the honey to become thin and sour. If the temperature of the inner walls of the hive can be kept above the dew-point (the temperature at which condensation takes place) the water will pass out of the hive through the entrance still in the form of water vapor. If the walls of the hive become too cold so that the air coming in contact with it is chilled below the dew-point, the water vapor is condensed and may finally run out at the entrance of the hive.

If the walls of the hive are thin and the cover is sealed down so that the moisture-laden air cannot escape at the top of the hive, most of the moisture will be condensed inside the hive. In this case frost and ice would be found on the inside of the hive during very severe weather. On the other hand, if the walls are well packed the water vapor will pass out through the entrance by diffusion unless there is some spot in the hive which is cold enough to chill the air sufficiently to cause condensation. In severe climates where the inner walls of even well-packed hives are sometimes chilled enough to cause condensation, many beekeepers provide for a slight amount of upward ventilation through the packing. In doing this a small opening is left in the cover (the bee-escape hole in the inner cover will do), this opening being covered over by a cloth, and over this is placed the packing. Such an arrangement will permit the escape of some of the moisture through the packing and yet retain most of the heat. Some remove the cover entirely and put in its place a piece of burlap, then over this the packing. In doing this there is danger of permitting the escape of too much of the heat of the cluster through the packing by air currents unless the packing is very dense and thick.

Since the amount of moisture exhaled by a colony of bees depends upon the amount of honey they consume, protection of the hive reduces condensation in two ways: (1) by raising the temperature of the inner walls, and (2) by reducing the amount of honey consumed because of reducing the necessity of heat generation by the bees. For the same reason colonies which have good stores (hence consuming less) are troubled less by condensation. Thus the factors that bring about better wintering result in less condensation, while those that bring about poor wintering increase condensation of moisture in the hives. Beekeepers have long associated wet and moldy combs with poor wintering, usually thinking of it as the cause, but it should be looked upon as the result rather than the cause of poor wintering.

A LONG in the year 1920 I received a free sample of Hubam clover seed from the Iowa station, and, after harvesting several pounds of it that

year, I decided I would plant quite an acreage in 1921; so I bought some more seed from Henry Fields and after I was through planting I found I had 43 acres in rows 21 inches apart. I had limed the ground well, and, although I was late in planting it, I harvested a fine lot of seed.

I paid \$30 an acre rent for the land I grew my Hubam on and \$10 per pound for the seed I bought, and hired nearly all the work done, as I am not a farmer but a beekeeper with about 500 colonies.

When I planted my clover I thought I was going to grow it as a side line with my bees; but when cultivation time came, and

TONS OF HONEY FROM HUBAM

*How Farmers Were Induced to
Plant 43 Acres Near This Man's
Apiaries*

By Edw. A. Winkler

would yield honey and lots of it, for I had read of others harvesting Hubam honey.

**Made Contracts
with Farmers to
Grow Hubam.**

I drew up contracts and advertised once in the local paper that I would furnish the seed, one-half the limestone, test the soil (in which I used the potassium cyanide test) and furnish bees to pollinate the bloom. Under my instructions the farmer was to prepare the soil, plant the seed broadcast, 10 pounds to the acre, and hull the seed crop, the seed to be divided equally between the two of us. I also planted some in all kinds of grain. Inside of three weeks my seed was all spoken for. In this way I had 438 acres planted by farmers, from 10 acres up to 70 acres each.

Nearly all the fields planted in grain early



Broad acres of Hubam furnished an abundance of nectar during August and September.

then hand-weeding became necessary with the managing of many boys, I soon found that my bees were the side line, and that I was working overtime to prevent a total loss in both lines.

When I had my seed all in bags and all expenses added up I found that my total investment was over \$3000, not figuring my own time. I was not discouraged, for I had over 2700 gallons of honey and I believe the finest lot of Hubam seed in the state.

I sold about 1000 pounds of my seed, but not many farmers were buying seed at \$2 per pound; so, long before the seed-selling season opened, I decided I was through selling Hubam seed. I had decided on a plan where I could invest my seed better than the money it would bring.

I had harvested not a pound of honey from my 43 acres, but was sure that if the atmospheric conditions were right, Hubam

in the spring had the Hubam just as high as the grain when the grain was cut. Those straw piles make mighty good feeding, for the stock eat it readily, while the grain yields were just as high as fields having no Hubam in. You know the chinch bug does not bother sweet clover. It's hard to find a chinch bug in a field of sweet clover, and I believe that Hubam in grain fields will, to a very great extent, eliminate this pest.

We are now cutting Hubam here that was seeded in winter wheat, oats, spring wheat and winter rye.

All of those stands in grain were planted 5 pounds per acre and will yield from five to six bushels of seed per acre, while the fields of Hubam planted alone will run from eight to ten bushels of seed per acre. One field planted in oats will average at least six bushels per acre.

The spring started in so wet that farmers

couldn't plant until almost the first of May, and then after it was planted there was not any more rain.

Heavy Honey Flow Through August from Hubam.

The bees started to work on alsike about June 5, and by July 4 I had 800 gallons of fine clover honey in cans. Wild biennial sweet clover followed on the heels of alsike, and before that was through my Hubam was white with bloom. I never saw bees carry honey so fast as they did all through August which is usually a month of dearth of nectar here and which was the case this year with two of my outyards that couldn't reach the Hubam fields.

We had a frost Sept. 26, and today (the 28th), although the fields are ripe with seed and cutting is progressing rapidly, there is an underbloom down in the Hubam that the bees are working on heavily.

I am usually about to pack my bees for winter by this time; but the supers are still on the hives and bees working just like in July, and, if I shake the bees off the unsealed combs, the honey splashes out like water, so I must leave the supers on until the bees stop working even if it is Christmas.

Extracted Six Times from Hubam Apiaries.

I extracted six times at all yards where Hubam was growing, and there will still be a clean-up. Many of my hives have already produced 400 pounds each. Some of those hives have over 50 pounds on now, and it seems that they will keep on working until it gets good and cold, for the Hubam fields that were cut over two weeks ago are beginning to get whitish again and with a late fall like we had last year . . .

. . . O, shucks! why be so hoggish? Hasn't

the good Lord been ever so generous this year, and anyhow, as soon as the bundles are hulled, the farmers are going to fall-plow it for corn or disc it up good and put in their winter grain.

We have organized the "Will County Hubam Seed Producers' Association." Altogether we have approximately 1000 acres. The object of this association is to sell, at a uniform price, clean, certified, scarified Hubam seed. I will not stop until Hubam is growing on nearly every farm in Will County. I don't know how much seed I will sell; but I know I will not sell all of it, for I am going to contract most of my seed out again next year in small grain, and Will County will flow with honey from May to October. When I look at the hundreds of cases of fine extracted honey piled up seven cases high in long tiers and in every available nook and corner until it is almost impossible to take stock, I feel that it is the best investment I can make.

Hail to Hubam clover, for it is more than a godsend, as our sage A. I. Root wrote. In time, when the seed is more plentiful, we shall see great fields of it plowed under; but the right time to fall-plow Hubam under is when the stocks are full of green seeds just as the white bloom is blasting, and that will be another godsend to the beekeeper.

With fields of Hubam clover all about us we get no amber fall honeys. Although there is a slight blend the honey is very light, and Hubam honey is decidedly different from that from the biennial white sweet clover which has a greenish color. Hubam honey is white to light amber and tastes very much like that from white clover or alsike.

Joliet, Ill.



UPON glancing backward a decade or more we look with no little pride upon the wonderful achievements which have been made in beekeeping practices. What are our thoughts, however, when we consider our product in relation to its marketability? Suppose we compare our natural sweet with some of the flavored sugar syrups that are placed upon the market profitably and in large quantities at about 45 cents per pound. R. B. Calkins expressed the situation clearly when he said, "The most valuable and meritorious sweet obtainable is begging a market at prices barely above the cost of production."

As producers we have better queens, better disease-control measures, better and

HONEY MARKET CONDITIONS

Lack of Greater Development of Consumer Demand, a Serious Handicap to Beekeeping.

By M. C. Richter

quicker methods in manipulation; we enjoy migratory beekeeping and many other new and improved practices. Are we, however, bringing about a consumers' demand for honey? Are not many of us today either acknowledging the letter sent us by honey buyers or contemplating the turning over of our crop to the same buyers whose agents call upon us in person? California offers unsurpassed honey both as to quality and quantity, with marketing centers at a great distance, and this fact has caused us and continues to cause us very grave concern. Five years ago we thought we needed, and rightly, a co-operative selling association. We formed it, and it has failed.

Co-operative Marketing Associations.

What is the position of co-operative asso-

ciations today? Five years ago some of the California associations were outstanding examples of co-operative efficiency. Compare them at present with the immense tobacco, cotton and grain marketing associations in the East. California associations look small indeed when it is known that the Burley Tobacco Growers' Association alone has 57,000 members.

Very recently co-operative marketing associations have progressed to an astonishing degree. Anti-trust laws have not affected the co-operative producers. Likewise it has been shown that the consumer gains and does not lose through farmers' co-operative associations. Notwithstanding, the majority of us today unfortunately retain our individualistic tendencies.

At the present time statistics show that from the average dollar which the American consumer pays for his farm products, the farmer receives actually less than 40 cents. On the other hand the Danish co-operative farmer upon delivering his product to England gets 65 cents out of the British consumers' dollars.

Honey prices, like those of most other farm-produce prices, are changeable and uncertain. Speculators favor variable prices, whereas a group of co-operative producers prefer to keep prices as steady as possible, accomplishing this end by maintaining accurate information concerning available supply. Through the control of a sufficient amount of such a supply, they are able to market intelligently. At this writing California honey is crowding the market, resulting in depressed prices. Later we may expect artificial inflation. Thus, individually the beekeeper is depressing his market. Co-operation means releasing honey when markets ask for it, resulting in increased returns for the producers without adding to the consumers' expenditure. Moreover, co-operative associations stimulate demand for their products through standardization, advertising and by the continuous adoption of better marketing facilities.

Our exchange did not fail because the co-operative movement had slackened. On the contrary, the foregoing statements have shown that co-operation is still sound and is more popular than before. Successful co-

operative enterprises not only must carry conviction and propaganda amongst their constituents but they must also show practical success in their competitive struggles with private enterprises. This is very important. The administration must be alert and energetic and show aggressive and intelligent control. If it has not these attributes, it has not learned the administrative virtues of the best privately owned corporations. Fundamentally the co-operative organizations must be as efficient as privately managed organizations, in order to succeed. Failures in co-operation are usually due to the well-known common faults of our large masses and democratic institutions. Conditions such as these never enter into the success or failure of privately owned concerns.

It is not my desire to advocate another selling organization. The time is not propitious. It is the intention here to point out that the principle underlying co-operative associations is sound, workable and practical. Eventually we are going to have co-operative selling, and please let every beekeeper bear this in mind.

Development of Local Markets.

For the next few years beekeepers will bend their efforts towards increasing the demand for their product in their home markets. Today this is the very best solution we have to offer. The lowering of honey prices this fall has been distinctly our fault. When the market is not in a receptive mood we must learn to hold honey till the demand is forthcoming. As individuals we cannot afford to advertise, and necessarily must hold our honey till it is wanted. Unfortunately the majority of those that do not hold are not readers of bee journals; but, be that as it may, we can all do our bit by selling just as many pounds as we possibly can in our immediate surroundings.

The Retail Package.

Our success in selling is measured largely by the quality and attractiveness of that which we have to offer for sale. Only comparatively mild and good-flavored honeys should be packed.

In presenting to the public extracted hon-



Annual Royal Show at Shrewsbury, England. Editor J. Herrod-Hempsall, of the British Bee Journal, popularizing honey in foreground at the right.

ey as distinguished from comb, we prefer the word "clear" to either "extracted" or "strained." We tell the consumer that the honey in the comb is comb honey, and that we have some clear honey in either glass or tin. We can go further and say that we extracted the honey from the comb, etc. If we give the consumers the term "extracted honey" they may consider in all probability that our product is an extract of honey, which at once would lead to confusion. As regards "strained honey," we believe that it is better that this term should be forgotten.

Of course all honeys should be heated before being packed. By so doing the honey has a brighter appearance, and granulation has been retarded. There is not space here to discuss the manner of heating and settling of honey and the manner of filling containers for the trade.

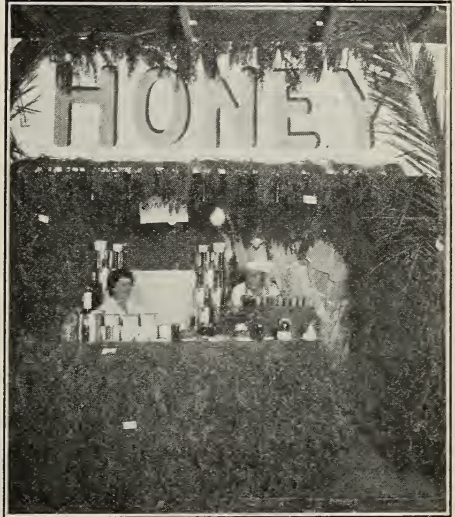
Experience in the beekeepers' community will determine whether it is wise to pack in glass or in tin. The label is a most important item. Its form, design and harmonious blend of colors mean a great deal in presenting an attractive article to the consumer. The name of the brand is just as important. It must "take" with the consumer. Above all, cleanliness of pack must be a factor never to be lost sight of. In order to compete with syrups we must present our article just as attractively as do the syrup manufacturers their syrup packages.

Value of Good Salesmanship.

The next step is to know how to "talk" honey. These that can do so are indeed fortunate, for it is astonishing how successful good salesmen really are. Building up a trade of satisfied customers is pleasant work.

Courteousness and prompt service are quite essential in this respect. There is always a certain amount of inexpensive advertising that will bring very satisfactory results. Honey-for-Sale signs are very effective, as are also window displays in grocery stores. The alert beekeeper will always hit upon some novelty, and through his persistence and hard work will supply many of his townspeople with the most wholesome sweet which they can purchase.

Big Sur, Calif.



Honey exhibit at the Industrial Exposition at Monterey, Calif. Booth is decorated with honey plants. Various foods containing honey were also on exhibition.



IN a not very distant past we have heard what are supposed to be very trite sayings, that successful results from the keeping of bees are dependent upon the beekeeper. For my own part, I have always resented such a statement. Much, very much is dependent upon the beekeeper, but if the beekeeper has not a proper locality and if weather conditions and some other things are not right, a profit cannot be made out of beekeeping.

The Brood-Chamber.

However, there is a matter, which, in my estimation, has grown more and more important for quite a number of years. Much emphasis has been added to this point by an illustrated article for Gleanings, by E. R. Root, upon sagging foundation.

THE HIVE QUESTION AGAIN

Three Veterans Discuss the Time-Worn Question of the Best Size for Hives.

By R. F. Holtermann, Jay Smith and J. L. Byer

to be among those in the front ranks of the advocates of large brood-chambers, and I can well remember saying, when the ten-frame hive superseded the eight-frame, that it was only a question of time when the twelve-frame would replace the ten-frame. That change is now taking place. There are no regrets on my part for having adopted a twelve frame Langstroth hive.

The statement has also been made by me for 10 years or more to the effect that I would not hesitate to adopt that kind of hive for the production of comb honey. It is a pleasure to me to see others express

The persistent and public advocating of large brood-chambers for 10 to 15 years has wrought a change in public opinion. I suppose I can claim

such views in Gleanings. If the Dadants will say after having counted—not guessed—the instances for five years that brood has been found in the supers of their hives, that the instances have not exceeded five per cent when no queen-excluders are used, then I would adopt the Dadant hive. Where bee-escapes are used, if there is any brood in the super, the bees will not go down; and I do not care to find many such when extracting a crop of honey. In making this statement I recognize that it is a very desirable thing to have a frame of the same size in the brood-chamber and super, but it is also desirable to do without a queen-excluder.

Wasted Space in Brood-Chambers.

Often, more often than the most of us realize, a queen does not use all of the comb space in the brood-chamber, because some of the cells are not the proper size. We may blame the queen for the presence of many unoccupied cells, when it is a matter of cells built upon stretched comb foundation. I undoubtedly have many such frames in use.

In my estimation what counts in bee-keeping is, not the best yield from one colony in the apiary but the average yield of the entire apiary in contrast to the yield from the best colony. If the beekeeper gets 350 lbs. from the best colony, and an average of 100 per colony is obtained in the apiary, it clearly shows that the beekeeper is far behind what can be done under best conditions, and this may be the result of stretched cells in the brood-chamber.

Brantford, Ont. R. F. Holtermann.

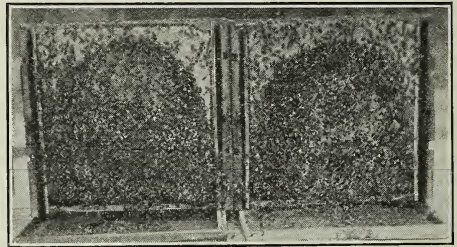
A Palace for the Queen.

In looking over the hives that have been made in the past 50 years, I have been impressed with the fact that, in a vast majority of them, little thought has been given to the main factor; that a hive should be made to conform to the wishes and whims of the queen, for the more eggs we can get a queen to lay, the more honey will that colony produce.

Hives have been made shallow in order to force the honey into the super, regardless of the fact that this also forced the queen to go on a strike for lack of convenient cells in which to lay. Divisible brood-chambers of varying size have been made, for they were convenient to manipulate although exceedingly inconvenient to the queen, since the queen will not lay outside of the cluster and since much of the area enclosed by the cluster is taken up with top-bars, bottom-bars, spaces between top and bottom bars and spaces between the bottom of the combs and bottom-bars. Thus it can be seen that "the bumblebees of the fields have holes in the ground and that hornets of the air have nests in the trees, but the queen bee hath naught where to lay her eggs" (with apologies to Matthew).

When Small Hives Reduce the Crop.

Then the craze for small hives ran rampant. The argument seemed to be that, if one could make a hive just small enough he could force every ounce of honey right up into the supers where he could get it and sell it. And the beekeeper usually felt lucky if it did force an ounce of honey up there. Naturally, the queen wanted a home suitable to her capacity; so she swarmed and found a nice big hollow tree with a cavity a foot and a half across and six or eight feet long where she proceeded to do the thing right. Some hives have been made so they can be easily hauled about on trucks to chase the honey flow. The claim for them is that they are light, easy to handle and are just the right size for one man—but hold



Brood combs 17 $\frac{3}{4}$ inches square. These give the queen ample opportunity to "spread herself." How would these do in the queen's palace?

on a minute, it is not the man that lays the eggs; it is the queen.

Barriers in Way of Queen.

It is astonishing sometimes to see how some little obstacle will cause the queen to curtail egg-laying. I once saw a nice young queen in a Danzenbaker hive crowd five combs with brood and refuse to lay in the remaining four just because between the five she was laying in and the others there was a space of about three-fourths of an inch. She crowded the five frames so that the bees removed every cell of honey. When the frames were placed close together she at once filled them with eggs. It has frequently been noticed that a frame of foundation in the brood-nest will confine the queen to one side of it, and frequently the colony will swarm rather than pass by the foundation. Most beekeepers have observed how reluctant a queen is to go down into a lower story when once she has taken possession of the upper story. When there are no bars and spaces she will lay clear to the bottom.

We cannot force a queen to lay eggs, but we can easily force her to stop laying or curtail laying. With the regular Langstroth frame, the queen attempts to lay in a circle. She enlarges the circle until she comes to the top-bar, and then she loses valuable time. If she knew just where to go it would not take much time to cross over to the other side and begin again, but some-

times she seems lost and goes back on the same side and lays a number of rows before going over to the other side. When the hive is filled with brood it is not, as the queen would have it if she had the running of things, in a circle, but in the form of an ellipse. In cool weather this is a serious hindrance, for in an ellipse much more surface is exposed than in a globe, therefore more bees are required to keep up the necessary temperature.

Small Hives Require Much Manipulation.

Have you ever noticed after a person has used a large hive he seldom goes back to a smaller one? In my early experience with bees, I used a small hive and was always manipulating it to prevent swarming and to force honey into the supers.

Along with this management I practiced spreading the brood to make the queen lay more, and I practiced stimulative feeding. The bees and I always seemed to be working at cross purposes. Whatever I wanted them to do, seemed to be the one thing they would not do. Even when I got them strong and all seemed well as they were working in the comb-honey sections, they would swarm and leave a lot of measly unfinished sections on my hands. Stimulative feeding is passing, as we are finding out that a hive chock-full of honey is the best stimulant. Spreading the brood has already passed. I am satisfied that spreading the brood invariably checks the egg-laying of the queen for several reasons. The brood-nest is enlarged, and if the weather is cool there will not be enough bees to cover it, and chilled brood results. More than this, the queen is bewildered as the nest is all disarranged, and, when she comes to a place that should contain empty cells, she finds brood, so she loses much time. Again on account of the brood being spread to too great an extent, the bees already have more brood than they can care for, so the queen ceases to lay. I have ob-

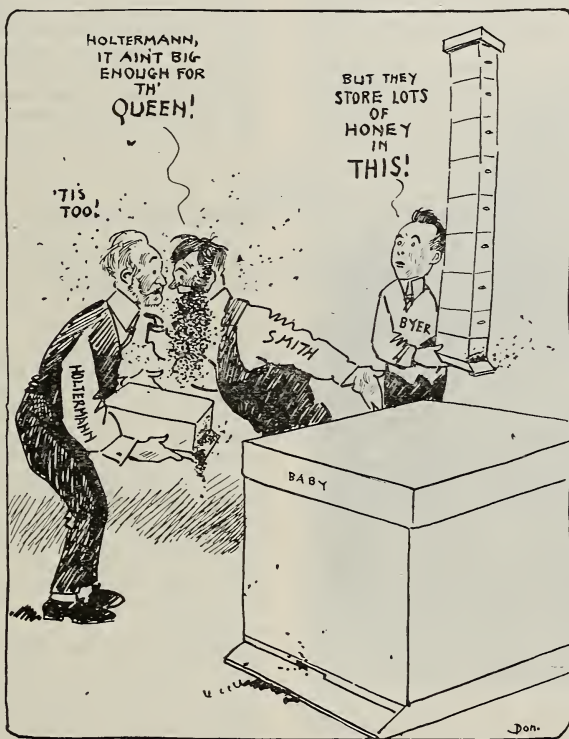
served these things so many times that I have adopted the plan of placing every frame back in the place that it formerly occupied, whether the weather is hot or cold. I feel certain that I get more brood by this practice. In building up a weak colony, when it needs more combs they are given next to the brood, and never placed in the center of the brood-nest.

After keeping bees a number of years, I decided that a larger hive would be the thing, so I adopted the Jumbo with metal-spaced frames. Right from the start, this was a joy both to the bees and myself. It seemed that instead of the bees and me

working against the interest of each other, we were co-operating. The queen would start in and lay eggs in those large circles that are always a delight to the eye. The swarming practically ceased, and the honey crop increased. Now some say that the big frames are bad to extract from. But the point is that the queen lays more eggs, hence there is more honey. I made a solemn covenant with my bees that, if they would manage to store the honey in the hives, I would in some way manage to get it out, and we are both living up to it to a satisfactory degree.

How to Build a Palace for the Queen.

If I were starting over and could get just the kind of hive I wanted, what kind would it be? Well, I would want it to be a ten-frame hive like the Jumbo but about two inches deeper. Then I would have an extracting-super just half as deep, so that, if desired, one could put on two supers and bring up a brood-frame from below, and it would fit perfectly. This would give an extracting-frame that would be midway between the present shallow frame and the Langstroth. With eight or nine of these in the super, they would be fat and ideal for extracting. If one had the ten-frame hives on hand, they could be used for supers, or any ten-frame hive equipment could be used



except the brood-frames. In a hive with frames of this kind the queen would lay in a circle and would produce more bees than in a smaller hive, and of course this would be my idea of a perfect Palace for the Queen.

Jay Smith.

Vincennes, Ind.

Size of Hive Less Important Than Proper Management.

Having used rather extensively about all the different-sized hives on the market during the past 20 years, possibly accounts for the fact that I am often asked as to what-sized hive I would use exclusively if starting over again in the business of producing extracted honey. As I have often stated, I have used many sizes of hives not because



Another large hive idea. A. A. Rodman, Kansas City, Mo., holding one of his large brood-frames, 17" x 15 inches.

of choice, but rather because of circumstances over which I had little control. Working with little capital, bees were bought regardless of the kind of hive they were in, and, not being of a mechanical turn, I did not go to trouble of having hives made over but used them as they were. Just a few days ago I was asked to give my ideas on the hive question in *Gleanings*, and this is my excuse for again taking up a very old subject, and one in which I frankly take little interest any more myself. We have at present in our different apiaries about 600 colonies in hives of eight-frame Langstroth capacity, about 150 in ten-frame Langstroth size, some 200 in eight-frame Jumbo size, and about 400 in ten-frame Jumbo.

Formerly Advocated Large Hives.

My grandfather was a successful beekeeper over 50 years ago, and as far back as I can remember—about 40 years—I recall how I often was with him in the apiary when but a boy, as he worked among the bees in the large hives that he used exclusively—a hive equal to about 17 Langstroth frames. So I was brought up among large hives, and naturally was of the opinion that anyone using a hive as small as the Langstroth was to be pitied. When we started in commercial beekeeping, our first purchases were bees in these large hives; and, as I had been trained in the use of these hives, naturally when I first bought an apiary in Langstroth hives, not knowing how to manage them, I was disgusted with the results, and the pages of *Gleanings* and other journals of that date contain criticisms written by myself that appear very funny indeed to me today. Even as recently as seven years ago, if memory serves me right, I stated that my preference if starting over again would be the ten-frame Jumbo. Today, after a more extensive use of these different-sized hives, frankly, I hardly know what to say when asked the question as to my preference. I have an idea that, if put to the test, possibly the eight-frame Langstroth would be the choice, particularly so because my two boys now grown up would certainly urge me to make that decision.

But if I had an apiary of any considerable size in any of these different-sized hives, provided the combs were good straight worker and drawn from foundation, under no consideration would I change them into any other size. Why? Simply because by applying the kind of management suited to each hive, there will not be 5% difference in results between any of them. There may be certain climates where certain-sized hives are better than others; but as I read some of the absurd claims made for one kind of hive over another, it seems ridiculous as I now see things.

Better Wintering With Smaller Hives.

The larger hives are, as a rule, heavier in the fall and the bees require less feeding than bees in smaller hives. This sounds nice, but it often works out otherwise. We always have to feed the colonies in Standard eight-frame Langstroth hives heavily, and with us that size of hive is not safe for winter till the bees refuse to take any more syrup. For the past few years, since adopting that system of feeding for winter, the small hives have invariably wintered the best. This is not necessarily because the hives are small but because they have an abundance of good stores, and the combs are so solid with stores during early winter that but little brood-rearing can take place to wear out prematurely the old bees, and the colonies come through vigorous and strong.

We do not worry as to whether there are enough empty combs for bees to cluster on. We have often had colonies on solid combs

of stores the first of November when a temperature near zero came three weeks later. Bees will not die under those conditions, even if experts say they will. Try it and be convinced. With our large hives we feed less, and quite too often the natural stores prove to be poor for wintering. It is needless for me to comment on just what happens under those conditions. This year the only dysentery we have noticed was in one yard where the hives are very large and the bees had a large amount of natural stores. Some colonies actually perished on combs of honey mostly granulated, and everything inside the hive was a smeary mess.

Standard Frame Easier to Handle than Jumbo.

Then again since disease has become so common in our section, the Standard comb is much more easily handled than the Jumbo, and aside from the disease question, in ordinary manipulation the Standard combs handle the nicest. Commercial beekeeping seems to be fast drifting to the cen-

tral-extracting plant idea, and here again a smaller frame is best for reasons that need no explaining. In conclusion, let me say that I have no thought of "knocking" anybody or any particular hive in saying what I have. Commercial beekeepers are free to use what they like, just as I am doing, and I can only hope that beginners who may have exaggerated ideas as to the merits or demerits of any particular hive may have their minds cleared of such ideas, as one hive will give practically as good results as another, provided each size is given the management suitable in each case. I can only repeat what I said in the beginning; and that is, if I had an apiary in any of these different-sized hives, that I would not change them into any other simply because I thought I would get more honey, for, after our varied and rather extensive experience with all the hives on the market, I positively know that there is little in such a contention.

J. L. Byer.

Markham, Ontario.



ONE hundred apiaries over a range of 200 miles; 100 apiaries of an average of 100 colonies each, or a total of 10,000 colonies of bees, with an annual

production of over 2,000 barrels of honey of 550 pounds each—such, in brief, is the story of a man and his sons who possibly are producing more honey and shipping it to Europe than any other one man or family in the United States or the West Indies. There are syndicates or corporations in Honolulu that perhaps own and operate 100,000 colonies of bees; but no other single individual or family, so far as I know, unless it is our friend, J. J. Wilder of Waycross, Ga., owns and operates so many bees.

Mr. Hernandez started shortly after the Spanish-American war. At that time, he did a general export business. He bought up a lot of honey and sold it in Europe, but lost in the deal. He knew little or nothing about bees, and, as he said, this experience in the honey business was enough to cure him. Some of the beemen asked him if he could not sell their honey for them. No, sir; he would not buy and sell again, but he might handle the honey on commission. The deal was made, and both he and his friends made money. This convinced him that he could do something in the way of selling honey. Could he produce it? To make a long story short, Mr. Hernandez calmly bought up 1,500 colonies of bees for a start. Instead of making the mistake that most people do who go into the busi-

OPERATING 10,000 COLONIES

How One of the Most Extensive System of Apiaries in the World is Managed

By E. R. Root

ness heavily, he and his sons made a success of the business at the very beginning. His oldest son, who had studied at one of the universities in this country, became interested. He read his A B C of Bee Culture over and over before he did anything with the bees. In fact, he became saturated with the theory, and hence all he needed was practice. He then went among the bees, and it was not long before he was telling some of the old hands some new tricks of the trade that he had read about in his A B C book. The other boys, with the father, in the mean time took a hand in the business; and, as we would say in American parlance, they made a "howling success."

Transporting Honey by Mule Trains.

This remarkable family of father and sons increased their holdings of bees from an initial start of 1,500 colonies until they had 10,000 in 100 different apiaries scattered over remote places, many of which were accessible only by mules. The business got to be so large that they organized mule trains to carry honey to and from the yards that could be reached only by trail. They had galvanized cans made in such a way that they could be loaded on a mule with a special saddle, each mule carrying from 240 to 300 pounds of honey. In each mule train there would be from 10 to 12 mules with one driver. Strange to relate, these mule trains make anywhere from 25 to 50 miles a day; and 10 mules—figure it out for your-

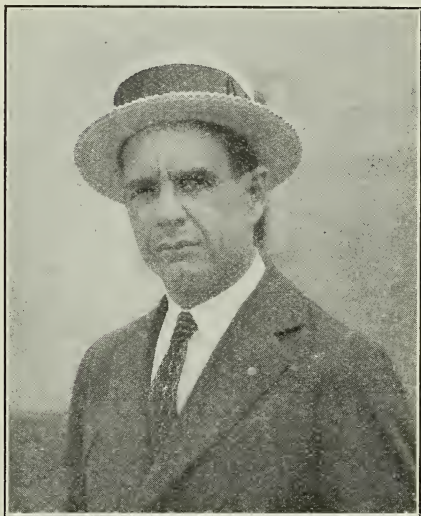
self—would actually carry a ton of honey.

Of course, at other apiaries where there were good roads gasoline or rather alcohol trucks were used to carry honey to and from the yards. Of course, these are much more efficient where road conditions make their use practicable.

The oldest son, Louis E. Hernandez, whose pictures are here shown, and to whom, it must be said, great credit is due for "reading up" on the subject thoroughly before he began work, is the business manager. He does not now work among the bees, but manages the business and sells the honey, meeting some of his trade face to face.

Producing More Than a Million Pounds of Honey Annually.

Let me make it plain that the senior Hernandez and his sons are producing Bell-flower honey, or what is called in Cuba and



Louis E. Hernandez, sales manager for the Emilio Hernandez Co.

Europe Campanilla. Their annual crop of this honey reaches the enormous aggregate of over 2,000 barrels of 550 pounds each. The honey is packed in barrels in such a way that it will not leak; and, moreover, the product is in no sense the ordinary Cuban honey of all kinds of colors and flavors, with dirt and dead bees mixed with it, but is a strictly high-grade clear honey produced with the most modern appliances and method of management, and, of course, it brings the best market price that a good, clear, well-flavored honey ought to bring. About 60 per cent of the honey is white or light. The rest is slightly on the amber color.

During the Great War the Hernandez people were doing a paying business, producing as well as buying and selling. While they had an almost unbroken line of success in the start, like almost everybody else engaged in the honey business they were

hit hard by the terrible slump in 1920 that drove many a person into bankruptcy. If they had not been well heeled financially they never could have stood the loss. When I asked Mr. Hernandez if he had any objections to telling his actual loss he said "Sure not." They lost to the extent of \$100,000; and the mistake they made was that they did not quit buying six months before they did. Had they just gone on and produced honey without buying any, their loss would have been comparatively light. Even as it was they weathered the storm, and now stand out as the most extensive beekeepers in the world, for one person or family.

Louis E. Hernandez, who called at the office of Gleanings, looks as if he might be not over 30 years of age; but he is just 40—40 years young. He and the other members of his family are evidently making a fine thing by all working together. Two of his brothers are in the apiaries constantly, together with the father, who, at the age of seventy, is still very much of a beekeeper, and able to keep up his end of the job.

This is the way the father and the boys are lined up in the business: Emilio Hernandez, the father, and owner of the business; Louis E. Hernandez, general manager; Juan P. Hernandez, office manager; Alberto Hernandez, general manager of the apiaries.

There is one other son, a dentist, not connected with the apiaries—Dr. Carlos Hernandez, Pennsylvania University.

These men, with the exception of the last mentioned, run this big business. While the father is sole owner of the business, the boys know that at his death the property will come into their hands on an equitable basis.

We secured three photos of Mr. Hernandez while he was here. If you ever have an opportunity to shake hands with him you will find he is able to converse with you fluently in both English and Spanish; and there is scarcely a trick of the trade in the production of honey that he does not know.

The moral that comes to us, it seems to me, is this: If you are going to start in any business, read up, study, and saturate yourself with all the information you can get. Keep your text-book before you as you begin to put your reading into actual practice; then, perhaps, you can start with bees or anything else in a large way and make it succeed.

Uses Standard Langstroth Equipment.

I asked Mr. Hernandez what kind of hive and brood-nest he used.

"Regular standard Langstroth hive," he replied.

"Do you breed up in one or two stories?"

"One, two, or three, as the case may be," he replied.

"Do you use queen-excluders?"

"We do not. The honey flow takes care of that. We breed usually in two stories. These two will be full of brood and young

emerging bees, when the honey flow comes on. When it does come it comes with such a rush that the cells vacated by the young bees are filled with honey. The breeding-room of the queen is therefore automatically curtailed, but not until the queen has had a chance to supply eggs for a populous colony in time for the main honey flow.

"Do you have much trouble from swarming?"

"Very little after the main honey flow comes on, although we have some before that time arrives; but not a great deal of it, because the queen has range of as much room as she needs, when Nature steps in and checks the breeding by flooding everything with honey."

This condition of bees, not swarming after the main honey flow is on, is found in many parts of the South, and in some parts of the North where the flow is exceptionally heavy and continuous. It is very convenient because it enables the apiarist to forget about swarming and give his whole attention to providing room.

Buying 5,000 Queens at a Time.

"How often do you requeen?" I asked.

"As often as we can with 10,000 colonies. We raise a good many queens and buy some," he answered.

"You must buy a good many at times," I remarked.

"Yes," he said, "we have bought as many as 5,000 at a time from different breeders in the southern United States, and some of these breeders have come back, wanting to know what we were doing with so many queens. They did not know that we had 10,000 colonies of bees, and that our needs would be somewhat extensive."

"Then you believe in young queens?"

"Yes, sir, and we would requeen every year if the expense were not too great."

"Do you use power extractors?" I asked.

"No," he replied; "because hand power is cheaper than gasoline power which our help can not operate to good advantage."

In this connection he said something that interested me greatly; and that was that the Cubans with their cheap molasses are able to make a denatured alcohol for running automobiles that is cheaper than gasoline, cleaner, and much less inclined to carbonize the cylinders. This only leads me to observe that we should be doing that same thing in this country—making a motor fuel that is as cheap as or cheaper than gasoline. If the farm produce that is now going to waste, merely rotting, were converted into denatured alcohol it would give us vast quantities of cheap motor fuel that would help to hold in check the monopoly on gasoline, if there is one.

A Trick of the Trade Worth Knowing.

In the course of the conversation Mr. Hernandez mentioned the fact that his people had no trouble in shipping honey in barrels without any leaking or smearing. He explained that it is perfectly easy (a fact well

known to exporters and importers) to cooper a barrel so it will not leak. Barrel staves, of course, are wider in the middle than at the ends. When the staves are assembled the hoops gradually draw these ends of the staves together against the heads of the barrels, and this very drawing together of the hoops causes the middle of the staves to bind very tightly, while the ends tend to push away from the curved line and from each other. This has a tendency to leave a slight gap between the ends of the staves. If there is any leak in the barrel at all it will be at the ends of the barrel rather than in the center. To overcome this trouble exporters have been in the habit of using rush or reed stems or leaves, and inserting them between the staves, from 10 to 15 inches



Louis E. Hernandez talking with A. I. Root at Medina.

from the ends. These rush leaves or stems, as the hoops are drawn down, will be squeezed between the ends of the staves. When the barrel is coopered tightly, this caulking, so to speak, closes up any possible gap. If there should be a slight tendency to leak, the rush leaves or stems will expand and close the opening.

Probably not many in this country are shipping honey in barrels; if there are any, they will do well to observe this precaution. Some people call the rushes "reeds." The kind that is used for caulking barrels is obtained from Holland and England. They are sold in large quantities for that purpose. Of course, there are some rushes or reeds that are better than others.

In some cases, bananas leaves are used in places of the rushes. They are not so good, however. Anything that has a pithy or spongy center and which can expand or be compressed like a rubber gasket in a steam joint will answer for the purpose.



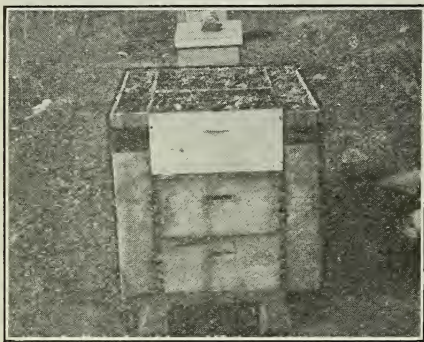
A SIMPLE PACKING METHOD

Winter Packing-Case Having Packing Material an Integral Part of its Panels

Last winter I tried a packing method for two two-story hives placed together, which called for removing three frames from both bodies of each hive and using the vacant space, which was opposite the second hive, for packing. To keep the packing material (forest leaves) from the remaining combs, a two-story tight division-board was used. I found it best after removing the six frames to place the inner cover over the bees while packing the vacant space. This packing was done before the hives were moved together.

On top of these hives were placed two hive-bodies with a piece of burlap between them. This burlap was to make a tight fit and prevent the escape of heat upward between them. These bodies were also packed with forest leaves and covered with a bee-escape board upside down.

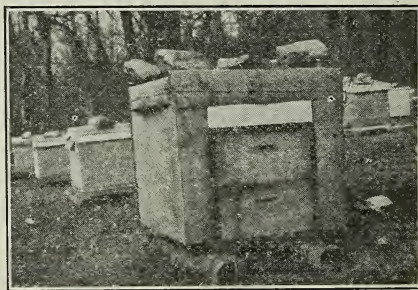
The front of the two hives was protected by a box of the same depth as the three hive-bodies, plus the thickness of the inner cover and an escape-board, and as long as the width of the two hives—32½ inches. The width of the box was six inches on the inside, which was the thickness of the end



Shallow trays filled with packing stapled to ends of hives. Sides are packed with division-boards and empty supers hold packing on top.

packing used. The bottom and ends of the box were of ¾-inch material. The outside was of ½-inch tongue and groove ceiling. The side that was to be placed next to the hive was of burlap. The purpose of the burlap was to take up all irregularities of the hive fronts and make, when this box was packed, a perfectly tight union with the hive. The box rested on the end strips of the bottom-board and was secured to the hives by four hive-crating staples. The

entrance, which was not changed in any way, except that the entrance cleat was placed in position, was protected from ice and snow by the overhanging packing box. The backs of the hives were protected in the same way, except that the box was 1½ inches deeper so that the back end of the bottom-board could be covered. The cover of this case consisted of a piece of tar roofing with a lath tacked to each end. For bottom packing, leaves were stuffed under the hives.



Tarred paper cap in place completes the job. Entrances are below the front packing.

These leaves did not absorb moisture from the ground, and were perfectly dry when removed in the spring.

When I packed these colonies the seven frames in the top story of each colony were solid with honey, and when the fruit-bloom honey flow started in the spring I feared more room would be needed, so I removed the packing from the hive-bodies which were on top and then took the block off the escape hole in the inner cover below. The bodies were then filled with three frames of honey and seven empty combs. One of the colonies, which had a young queen, promptly took possession of this third story and started moving honey to it from below, as well as using it for the storage of incoming nectar. The other colony, which had an old queen, did not make use of these extra combs up to the time they were unpacked, about May 10.

In unpacking, the four staples holding the front case were drawn, and the case with the packing was lifted off. This was carried to another part of the yard and laid flat, wood side down, on two logs. The back case was then removed and laid on top, burlap side down. These then were covered with tar roofing and will be left until fall when they will be ready to go back, already packed, on the hives. To carry this point still further I intend to build a tray of ½-inch material with a burlap bottom, to take the place of the two packed hive-bodies. In the spring the tray will be laid aside without

FROM THE FIELD OF EXPERIENCE

disturbing the packing, and in this way I shall eliminate the handling of all loose packing, with the exception of that which goes inside the hives and underneath. It was the work of only a few minutes to remove the inside packing and the division-boards, and add the six frames to each colony. The colonies were then ready for the honey flow. Geo. Harrison, Jr.

College Park, Md.

NATIVE BEES IN AFRICA

Excessive Swarming, Small Colonies and but Little Honey Among Wild Bees

I have been spending some months at Choma, North Rhodesia, just a little nearer the equator than latitude 17 S. There is always blossom in the bush and, I should think, a good honey flow three or four times a year. If bees could be induced to work for us as the negroes do (though they work very little for themselves), a lot of honey ought to be gathered in this country. As it is, a wild bees' nest is not worth robbing.

The native bee is considerably smaller than the European, and the cells of its comb are of course in the same proportion. I noticed them in two colors, brown like the German bee and with several yellow rings like the Italian. The brown I never observed at home, all the nests I saw being yellow. They inhabit small cavities in the trees or in ant hills, and when these are full they swarm out at all times of the year, only a handful of bees, to start similar unambitious colonies.

The honey that the natives bring in is always lamentably thin. Probably the colonies are not big enough to ripen it properly, though the process ought to be easy enough in this dry climate. Is it likely that the Italian bees in a big hive would make a much better product from the same raw material?

I saw several nests chopped out, after the honey guide (bird) had led us to the place by flying backward and forward chattering like a stonechat. I found the native bee-hunter acting on a bit of bee wisdom that I have never seen utilized elsewhere.

Have you ever noticed that when a bee comes out from the back of the hive at the time you begin to uncover the frames, it is only moderately angry and after a turn or two goes in again at the front? Well, do you know what happens if it finds the front entrance closed? The native does, and he begins operations by closing the front and chopping at the back. Soon, the bees begin to come out at the back hole, wing round to the front and there stick on the closed entrance in a cluster like a swarm. By the time the honey is reached, there

are few bees in the nest, and those are young ones not very likely to sting. Just a little smoke is used, by pushing in a burning stick, and I believe it is almost unheard of for the operator to get a sting.

The three or four nests I saw chopped out yielded literally not a drop of honey. The time was quite near midwinter. Swarms were still flying; but, on days that in England would be accounted superlatively fine, few bees would be flying from established nests. The nests we chopped out had apparently been established a bare three weeks. There were just enough bees to cover the brood. The queen had practically ceased laying and was awaiting the birth of the first batch of nurses, when all would soon get lively again. Meanwhile the colony was literally living from hand to mouth, collecting each day only nectar enough for the needs thereof.

Only a few days after midwinter, so near that you could say only a few hours, a big and varied bloom of flowers appears. Some of these are very nectariferous, for example the sugar bush covering thousands of acres. About September the bigger trees blossom tremendously, and from October to Christmas the veld is covered with flowers. The drawback of the tropics seem to be that nectar is so abundant and easy to get that the bees do not trouble to gather it in advance of the week's requirements. New bees of whatever strain would probably soon tumble to the same argument and cease to accumulate the store that only winter makes necessary in our work-provoking climate. G. G. Desmond.

Sheepscombe, Stroud, Gloucestershire.

HOW TO SELL MORE HONEY

Canvassing the Consumer for Orders to be Filled Through the Retailer

I have been reading, with a great deal of interest, different articles on marketing honey. All these articles are good, that is, all that have been in Gleanings; but there is one thing I have not noticed yet in any article on marketing honey, and that is, canvassing the consumer through the retailer with an organized force of canvassers or salesmen.

There is not any surplus of good table honey and never will be; all that is needed is to get this good honey to the consumer, not the retailer, but the people who eat it, through the retailer. This will advertise honey far more and better than advertisements run in any periodical, and at the same time dispose of the honey and make new customers. Of course, it must be packed right, and I find that the 5-pound pail of chunk honey, is coming along mighty fast.

FROM THE FIELD OF EXPERIENCE

All beekeepers will do well to remember this, another season, and prepare for it.

I have 15 colonies of bees myself, and had a surplus of nearly 1,000 pounds of honey to market. I sold all this honey and have bought 2,400 pounds from other beekeepers, and can sell a lot more if I can get the honey packed right and the grade of honey I need.

I simply go out, make a canvass of the consumers and sell my honey at retail prices. Where you have many tons for sale, you will not be able to sell it all in this manner; but you can go to your retail merchant and make arrangements with him, then canvass his trade and deliver through him, and he will always buy two to three and four times as much honey as you sell to his customers through him.

I am figuring with a large honey producer on handling his whole crop another

consumer through the retail merchant. That concern is one of the largest manufacturers of soap specialties in the world, and that kind of advertising paid them, and paid them well. I want to say that I live in a section sparsely settled compared with most sections of our country, yet I can sell many times as much honey as I have sold each season, and not glut my local market.

Cameron, N. C.

Luther A. Fink.



MAKING AN INDUSTRY

What the Extension Division of the Louisiana State University is Doing for Beekeeping

Beekeeping is fast becoming one of the important industries of the state, this fact being forcefully brought out at the Ninth Annual Boys' and Girls' Short Course, which



More than 400 boys received instruction in bee culture during the boys' and girls' short course in August, at the Louisiana State University.

season, and the manner in which I mean to dispose of it is by organizing a crew of canvassers and working through the retail merchant. I can easily get enough over market price to pay the canvassers and all expenses, and still sell all the honey I want to sell. Why not advertise and sell our honey in this way? Any large producer can handle his crop in this manner, and then a few of them can get together and pool, and do still better. There is positively no need of dumping your honey on a glutted market, for the people want good table honey if you will get it before them, and it is no great problem to get it before them.

I worked for a large specialty manufacturing concern for many years, and we did most of our advertising by canvassing the

was held at the Louisiana State University during the first week of August, when more than 400 club boys received daily instructions in bee management from E. C. Davis, the extension bee specialist.

Not only did Mr. Davis lecture on the main topic relative to bee culture, but he gave actual demonstrations, and had the club members assist him.

"I have learned more about bees in one day than I ever knew before," said one boy, "although my father has kept bees all of his life."

During the first day of the short course a monster parade was held. There was a decorated float representing each phase of club work, and one of the most interesting was the bee float.

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A flower trellis with several honey-producing flowers was placed on the front of the float, while on a dais scores of honey jars of various hues surrounded two modern frame hives. On top of these was placed a "skep" or hive that is used in Europe. When half a score of pretty beekeepers were seated on the float, above which was the legend, "Have You a Little Honey in Your Home?" it was agreed by all that there could have been little added to increase its effectiveness.

"There is no reason why Louisiana should not rank with the leading honey-producing states, for nearly every kind of honey flower known grows here," said Mr. Davis.

"We have the willow in the central-southern portion of the state, from which the most delicious honey is made, not to mention the white clover which lasts until July.

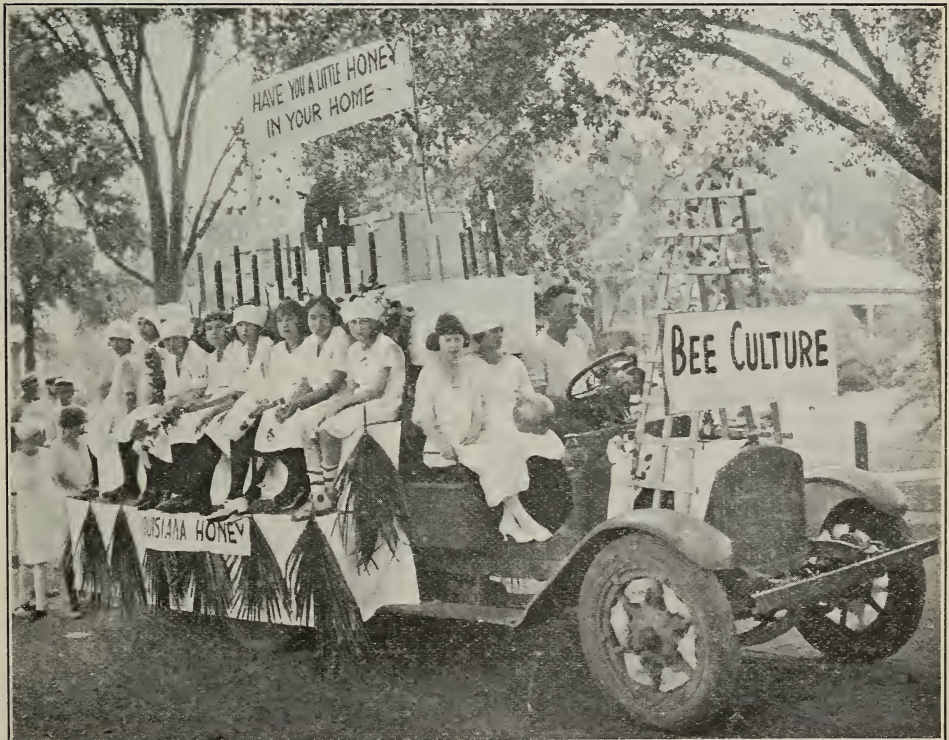
"With several hundred boys and girls learning how to handle bees properly, we may well expect some radical changes to take place in the old hit-or-miss system, as practiced heretofore," says the bee expert.

For the first time in the history of Louisiana a law affecting the bee industry was

passed by the 1922 Legislature. This act, known on the statute books as No. 88, introduced by C. P. Couvillion, himself a beekeeper, was passed to prevent the introduction into and dissemination within the state of contagious and infectious diseases of honeybees; providing for the eradication of bee diseases; authorizing the Department of Agriculture and Immigration of the state of Louisiana to make rules and regulations for carrying out the provisions of this act; prescribing a penalty for violations, and providing a revenue.

All honeybees shipped or moved into the state shall be accompanied by a certificate of inspection signed by the state entomologist, state apiary inspector or corresponding official of the state or country from which such bees are shipped or moved. These certificates must certify to the freedom of the bees, combs and hives from contagious diseases.

The Department of Agriculture is also given full power to deal with American and European foul brood, Isle of Wight disease, and all other infectious and contagious diseases. The shipment or movement of second-hand beehives, honeycombs, frames or



Attractive bee club float in parade during the ninth annual boys' and girls' short course at Louisiana State University.



FROM THE FIELD OF EXPERIENCE



other bee equipment into the state is forbidden except under such rules and regulations as may be prescribed by the entomologist in accordance with the law.

For the purpose of carrying out and putting into effect the provisions of the act, the Department of Agriculture is empowered to levy and collect such charges as may be necessary, but which shall not be more than the following rates:

On each individual partnership or corporation having not more than 25 bee colonies, the sum of 25 cents on each colony. On over 25 colonies and not over 50 colonies, the sum of 20 cents on each colony. On over 50 and not over 100 colonies, the sum of 12½ cents on each colony and on those having more than 100 colonies the sum of 10 cents on each colony. The money so collected will be receipted and deposited as a separate fund in the state treasury for the benefit of the honeybee industry of the state.

Every leading beekeeper in the state was behind the bill, as well as the state and parish farm officials and the extension department of the Louisiana State University.

Baton Rouge, La. Bentley B. Mackay.

HELPFUL HONEY HINTS

How to Utilize Its Delicate, Delicious Flavor in Cookery

Honey is usually known simply as a spread for bread, but it has many varied uses in cookery. It is wholesome and nutritious, and supplies the same food in the diet as sugar, and may replace fat to a certain degree. It is especially valuable for its delicate, delicious flavor.

In cookery it answers the same purpose as molasses, but has a more delicate flavor. Less soda is used with it than with molasses. Only one-fourth to one-half of a level teaspoon of soda is used for a cupful of honey. In substituting it for sugar, a cupful replaces a cupful of sugar in sweetness, but it contains more water; hence, one-fourth cupful less milk is used in the recipe. A honey cake made with butter will keep until the butter becomes rancid, and made without butter will keep for months and even improve in flavor. This is also true of the dough.

The standard recipe for a honey cake is: three-fourths cup honey, one-half cup sugar, two cups or more flour, one-fourth teaspoon powdered ginger, one-half teaspoon powdered cardamom seed, one teaspoon cinnamon, one-eighth teaspoon cloves, a speck of pepper, a pinch of salt, one-fourth to one-half teaspoon soda, one tablespoon water, and two ounces of blanched almonds cut in small pieces or chopped. A cake made by stirring the flour directly into the cold hon-

ey is found to be in no way inferior to those made with honey which has been heated. Thus it is not necessary to follow some of the old cookbooks in this respect. Likewise, it is not necessary to boil the spices with the honey before putting into the cake, nor to let the dough stand a day before adding the soda and baking powder. It is a little easier to knead the dough after it has stood over a day, since less flour is needed on the board, but it is not necessary to let it stand over. Honey cakes on standing become more tender and soft.

I find that honey gives a very fine flavor to breads and cakes. Here are some tested recipes:

Honey Bread.

2 cups honey, 4 cups rye flour, 1 teaspoon soda, 4 teaspoons aniseed, 2 teaspoons ginger, 4 teaspoons powdered cardamom seed, 2 egg-yolks, ¼ cup brown sugar.

Sift the flour with the spices and soda and add the other ingredients. Put the dough into shallow buttered pans to the depth of about an inch and bake in a hot oven.

Butter Honey Cake.

1½ cups honey, ½ cup butter, 3 egg-yolks, 5 cups flour, 2 teaspoons ground cinnamon, ½ teaspoon salt, 1½ teaspoons soda, 2 tablespoons orange-flower water (water may be substituted), whites 3 eggs.

Rub together the honey and butter; add the unbeaten yolks and beat thoroughly. Add the flour sifted with the cinnamon and the salt; and the soda dissolved in the orange-flower water. Beat the mixture thoroughly and add the well-beaten whites of the eggs. Bake in shallow tins and cover with frosting made as follows:

Orange Frosting for Butter Honey Cake.

Grated rind 1 orange, 1 teaspoon lemon juice, 1 tablespoon orange juice, 1 egg-yolk, confectioner's sugar.

Mix all ingredients but the sugar and allow the mixture to stand for an hour. Strain and add confectioner's sugar until the frosting is sufficiently thick to be spread on the cake.

For the cinnamon in the butter honey cake the following mixture of spices may be substituted: ½ teaspoon ginger, 2 teaspoons cinnamon, 1 teaspoon ground cardamom seed, 1 teaspoon cloves, ¼ teaspoon nutmeg, ¼ teaspoon white pepper; chopped citron or nuts may also be added.

This mixture may also be flavored with ginger, aniseed or cardamom seed.

Honey Sponge Cake.

½ cup sugar, ½ cup honey, 4 eggs, 1 cup sifted flour.

Mix the sugar and honey and boil until the syrup will spin a thread when dropped from the spoon. Pour the syrup over the yolks of the eggs which have been beaten until light. Beat this mixture until cold; then add the flour and cut and fold the beaten whites of the eggs into the mixture. Bake for 40 or 50 minutes in a pan lined with buttered paper, in a slow oven.

This cake can be made with a cupful of unheated honey in place of the honey and sugar syrup, but the quality is not quite so good.

Yellow Honey Cake.

½ cup sugar, 2 egg-yolks, ⅔ cup honey, ¼ teaspoon cinnamon, ½ teaspoon cloves, 1½ cups flour.

Sift together the flour and the spices. Mix the sugar and egg-yolks, add the honey, and then the flour gradually. Roll out thin, moisten the surface with egg-white and mark into small squares. Bake in a moderate oven.

Honey Cookies.

¾ cup honey, ¾ cup sugar, 2½ cups flour, ½ teaspoon soda, 1½ teaspoons cinnamon, 1 teaspoon

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cloves, 1 teaspoon allspice, 2 ounces finely chopped candied orange peel, $\frac{1}{4}$ pound walnut meats finely chopped.

Sift together the flour, spices and soda, and add the other ingredients. Knead thoroughly, roll out thin and cut with a biscuit cutter. These cookies are very hard.

Honey Cookies.

$\frac{3}{4}$ cup honey, $\frac{2}{3}$ cup sugar, $\frac{1}{2}$ cup milk, 3 tablespoons lard, 2 egg-yolks, 4 cups flour, $\frac{1}{2}$ teaspoon salt, 1 teaspoon ground cinnamon, $\frac{1}{2}$ cup finely chopped almonds, $\frac{1}{2}$ teaspoon soda or 2 teaspoons baking powder.

Bring the first four ingredients to the boiling point and allow the mixture to cool. Sift together the flour, cinnamon and soda or baking powder. Combine all the ingredients. Roll the mixture out thin on a floured board. Cut out and bake in a moderate oven on tins which have been greased and floured. To prepare the tins properly, brush them over with melted butter and sifted flour, turn them over and shake off as much as possible of the flour.

Honey Ice Cream.

One quart thin cream, $\frac{3}{4}$ cup delicately flavored honey. Mix ingredients and freeze.

Honey Ice Cream.

One pint milk, yolks 6 eggs, 1 cup honey, 1 pint cream.

Honey Fudge.

Two cups sugar, $\frac{1}{2}$ cup honey, $\frac{1}{2}$ cup water, 2 egg-whites, 1 teaspoon of vanilla extract.

Boil together the sugar, honey and water until the syrup spins a thread when dropped from a spoon (about 250 degrees F.). Pour the syrup over the well-beaten whites of the eggs, beating continuously and until the mixture crystallizes, adding the flavoring after the mixture has cooled a little. Drop in small pieces on buttered or paraffin paper.

The vanilla may be omitted.

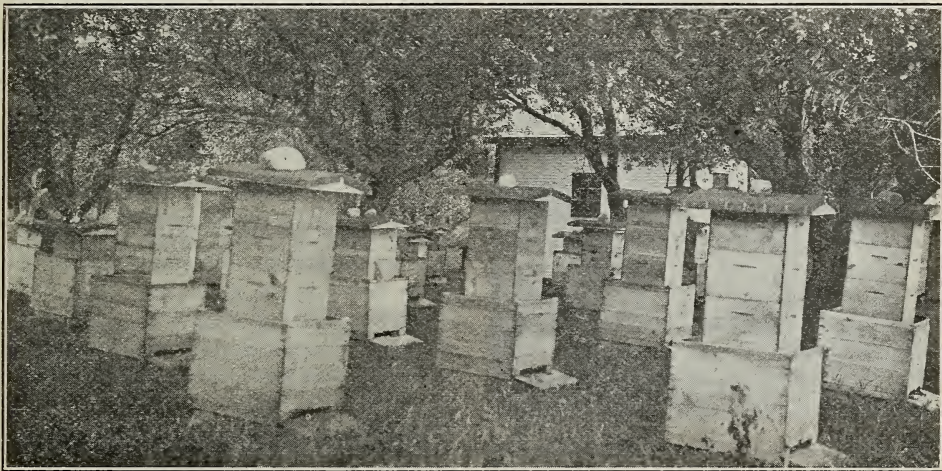
Mrs. Doris W. McCray.

Cedar Rapids, Iowa.

BEEKEEPING IN ONTARIO

Work of the Ontario Agricultural College and the Ontario Beekeepers' Association

"Distant pastures look green" is an old and true proverb. Sometimes, on arrival, however, we find those pastures prove to be a mirage and unreal, and the pastures left



Six tons of honey from 30 colonies increased to 50 this year. Apiary of F. K. Krouse and sons, located 20 miles from Guelph, Ontario.

Heat the milk in a double boiler. Beat together the honey and eggs, add the hot milk, return the mixture to the double boiler and cook it until it thickens. Add the cream and, when the mixture is cool, freeze it.

Honey Icing.

One cup granulated sugar, $\frac{1}{4}$ cup water, $\frac{1}{4}$ cup honey, 1 egg-white.

Boil together the sugar and the water for a few moments and then add the honey, taking precautions to prevent the mixture from boiling over, as it is likely to do. Cook until drops of the syrup keep their form when poured into cold water, or to about 250 degrees F. Beat the white of the egg until stiff, and when the syrup has cooled slightly pour over the egg, beating the mixture continuously until it will hold its shape. This frosting is suitable for use between layers of cake, but is rather too soft for the top. It remains in good condition and soft enough to be spread for many weeks and, therefore, can be made in large quantities for use as needed. After eight months, such icing made in this laboratory was found to be in good condition and soft enough to eat.

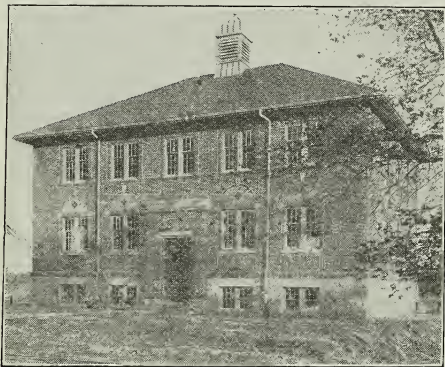
behind are in reality more profitable and greener than the new surroundings. Many beekeepers in various parts of the states have, from time to time, heard of one state or another as possessing some wonderfully good locations, from the beekeepers' standpoint. While this article is not written with the idea of alluring beekeepers to Ontario, a brief summing up of our beekeeping resources will be interesting to those in other parts.

Geographically speaking, Old Ontario is in about the same latitude as lower Michigan, New York, and central and southern Wisconsin; while New Ontario stretches to the north of Minnesota, northern Wisconsin and the upper peninsula of Michigan.

Before touching the practical side of the subject, the following is a brief history of

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the educational side: Beekeeping has been taught at the Ontario Agricultural College, Guelph, since 1909. Credit must be given to Morley Pettit for his work as provincial apiarist and head of the department of apiculture for nine years, as being largely instrumental in placing apiculture in the position it occupies at the present time. Today we have a fine stone and brick building, devoted entirely to apiculture, which cost about \$60,000. We have an apiculture option leading to a bachelor's degree, at the end of the four years' course. The apiculture option is based on biological subjects, and students taking this option must have at least two years' experience with a commercial beekeeper. This insures that the graduates will be practical as well as receiving the scientific training. The apiary consists of about 200 colonies, including a special queen-breeding apiary. There are two annual short courses, one of two weeks in January and a one week's course in June.



The new apicultural building of the Ontario Agricultural College, Guelph, Ont. It is said to be the finest building devoted wholly to beekeeping in America.

Ontario has a successful beekeepers' association, with a membership this year of nearly 1500. Our annual conventions are always well attended, and speakers from various states in the Union have declared that our attendance is larger than that of any similar convention elsewhere in North America. This year the association has purchased honey containers, supplies, over 3000 queens and 2500 nuclei and package bees for its members. At the annual convention, to be held at the Prince George Hotel, Toronto, on December 6, 7 and 8, we expect to launch a co-operative buying and selling organization, and in view of the volume of business done during the year, amounting to over \$70,000, without special organization, there is every prospect of a successful start. At the Canadian National Exhibition held in Toronto from August 26 to September 9, the associa-

tion staged a honey exhibit and sold over \$3000 worth of honey, in packages up to 10 pounds, mostly in glass packages of one pound and less.

Coming directly to the practical and commercial side of beekeeping, Ontario is very favorably situated. In the spring our main sources of honey are from willows, soft and hard maples, elms, dandelion and fruit bloom. Our main summer sources are from the white Dutch and alsike clovers, with basswood and the sweet clovers, the latter becoming more abundant each year. In the north, wild raspberry and fireweed or willow-herb also provide a good surplus. In the fall, buckwheat, goldenrod, boneset and asters are found in many localities and prove good yielders. Nature has been kind to Ontario beekeepers in that the honey flows are usually well defined. Our spring sources yield amber honey, our summer sources a fine quality table honey, and our fall sources dark amber or dark. Careful beekeepers have little trouble in keeping each color of surplus separate so that we have a very high percentage of light honey.

Many of our commercial beekeepers are favorably known throughout North America, and among them are members with nearly 1000 colonies. Some of our largest crops this year will run from 50 to over 100 tons.

It is not easier for inexperienced beekeepers to succeed in Ontario than elsewhere, but we believe that there are few, if any, other places in the world that will yield so large an average of fine quality table honey as Ontario, Canada. The number of beekeepers in Ontario has undoubtedly decreased in the past decade, but the number of commercial beekeepers and colonies has materially increased.

Our annual convention is open to any beekeeper, and a card addressed to the secretary's office, O. A. C., Guelph, will bring a program. A special invitation is quite unnecessary. We could tell of many other advantages which Ontario possesses but will leave these for the convention.

Guelph, Ont.

F. Eric Millen.

HONEY PRODUCERS' LEAGUE

What It Has Been Doing and What It Expects to Do

The program which the Executive Committee of the American Honey Producers' League has laid out for the coming year is as follows: Publishing the booklet on laws pertaining to beekeeping and beekeepers, establishing a means of contact with individual members, furnishing warning signs, and taking up beekeeping problems that demand national attention.

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Plans are now being made to publish the Legal Aid Booklet and furnish it at cost to members of the American Honey Producers' League.

Nothing important this year in the way of a national advertising campaign will be undertaken, as there are not sufficient funds available to make any progress in this connection.

Our most important effort at this time will be to establish contact with the individual members of the League through a monthly bulletin to be either mimeographed or printed. We do not have the names of all the members of the League and would appreciate having any beekeeper, who is now a member, write to the secretary, Dr. S. B. Fracker, State Capitol Annex, Madison, Wisconsin. If you have not paid your dues for 1922, do so at once and also send in your dues for 1923.

The League has established one important piece of service which has been of considerable value to a number of beekeepers. This service is the warning sign, which has helped to prevent losses in out-apiaries wherever posted. Some of our beekeepers report that they have always had difficulty with thieves until they put up these signs. In practically every case these signs had the effect of stopping the trouble. As these signs cost only 25c each, it will pay each beekeeper who is a member of the League to provide himself with one or more signs for his outyards. These can be secured by writing to the secretary.

The Schedule Committee of the League has again arranged a series of meetings, including the group of the northeastern states, the central western states and the Pacific northwest. In this connection our program includes an organized effort to secure better co-operation among beekeepers and beekeeping organizations. In order to accomplish this, it is necessary to have the moral and financial support of all beekeeping organizations in the United States. In fact, nothing can be done without the beekeeper. Let every beekeeper put his shoulder to the wheel and help to make this co-operative effort successful.

The Fordney-McCumber Tariff Bill was signed by the President on September 21, and from that time on all honey coming into the United States from foreign countries will be taxed an import duty of 3c per pound. This replaces the former duty of 10c per gallon, which has been in effect since the 1913 tariff bill.

Now that the new tariff on honey has been established, it should be known among beekeepers that the American Honey Producers' League is greatly responsible for this tariff. There is a question in the minds of some beekeepers as to whether or not this tariff is desirable; but, regardless of whether

we are right or wrong, the power which a united beekeeping organization may have in national affairs should be pointed out to our beekeepers.

Every beekeeper must put his shoulder to the wheel to make this national organization successful. Nothing can be done without the beekeeper, and the League solicits your support.
H. F. Wilson.

Madison, Wisconsin.

HONEY-SELLING HINT

How to Impress upon Physicians the Food Value of Honey

Some time ago I ordered some of the Dr. Miller booklets on the food value of honey, and as I was giving them out the idea struck me that I should give each doctor I knew a copy of it. So I have been giving them out to the doctors I know, and some of them have asked for more to give out to their friends. I believe it is safe to say that I have sold 30 pounds of honey for each of these booklets given the doctors. When we give a doctor one of these papers, and he sees it is by Dr. Miller he reads it; while, if some honey producer got it up, he would pitch it into the waste basket.

Almost every month we see something in the bee journals about having healthier and happier children, by feeding them less sugar and more honey. How far do these articles go toward advertising honey? The beekeeper reads it, lays the journal up and forgets about it. If we can get a copy of this booklet into the hands of all family physicians and impress them with the food value of honey, the doctors will prescribe feeding honey to the children and the mothers will see that they get it.

It would be very easy to get these booklets distributed to every doctor in the U. S., if each beekeeper would send out a few to every doctor in his community. Beekeepers' associations could get a medical directory and use that for a mailing list. I also believe we should put some of these booklets in each school so the teacher may teach the children the value of honey. If we can get half a dozen of these booklets to each doctor and teacher, we will note a big difference in the sale of honey. J. W. Powell.

Mesilla Park, N. M.

[Medical journals have shown an interest in honey in dietetics for some time, but the subject has not developed to any great extent. Recently, however, several articles of this nature have appeared in the medical journals, and investigators are now turning their attention to this subject. If the American people must first take honey as a medicine to find out how good it is as a food, let us hope that the doctors will prescribe it freely.—Editor.]

A LETTER was just received from H. E. Grey, Fort Edward, N. Y., inquiring what proportion of honey in water would be required to keep it from freezing when used in an automobile engine. I tried a mixture late last winter of 50 per cent honey; but our cold weather was nearly past, and the temperature went down to only 12° above zero, which it stood without freezing. Further experiments should be made, as a honey mixture is a stable mixture; while denatured alcohol, largely used for this purpose, evaporates rapidly, and one never knows just what the proportion is in his engine.

* * *

E. A. Kirkpatrick of Narberth, Pa., gives a very interesting account of a young man paying his expenses while in college by keeping bees. He may be interested in knowing that the present president of Pennsylvania State College helped himself through college in this way. This method not only helps pay expenses but gives a young man a business experience that is of almost as much value as his college training, and certainly is of great value as he goes out from college into the active duties of life.

* * *

The article by E. R. Root on bottling and selling honey, commencing on page 632, must prove of great value to beginners as well as some of us who have been longer in the business. One of the provoking things about bottling honey has been the scum, or what appeared to be scum, on top of our honey when we knew well enough there was no scum in it. He tells us it is only small air bubbles that make the trouble, and explains how to avoid causing these bubbles. Honey producers are to be congratulated that tin packages are coming more and more to be used for retailing honey.

* * *

"The Wintering Problem," as treated by Geo. S. Demuth, pages 636 to 639, is most satisfactory and is quite in harmony with my experience of the past 50 years. In only one or two things would I suggest anything farther. Where he suggests the use of shallow trays of insulating material for the top of single-packed hives, we use large bran burlap sacks and find them much more convenient to handle than the wooden trays we formerly used. Where he would unite all colonies deficient in bees, we have found such to winter very well if the brood-chamber is reduced to four or five combs and well packed. Of course, if one has colonies enough, it might be better to unite.

SIFTINGS

J. E. Crane

That interesting editorial, on page 631, makes automatic feeding look pretty good, but our experience with food chambers has not, so far, proved sat-

isfactory in winter. I have talked with one or two others whose experience has been the same. It may work better in a milder climate.

* * *

On page 629, October Gleanings, an editorial mentions the trouble some have with the granulating of sugar syrup for feeding, some even saying that their syrup will granulate before it is taken from the feeders. Of course it will or may, if very heavy; but, after the bees have stored it, it is another story. The bees change it so as very largely, if not completely, to prevent granulation. If any one doubts this, let him take a sample of heavy syrup in a bottle and another of the same, after having been fed and stored by the bees in their combs, in another bottle, and note the difference. The sample that the bees have stored will remain liquid for a long time, while that which the bees have not touched will show granulation very quickly. So in feeding we make a syrup as heavy as the bees will take before it granulates. After they take it we do not worry, as the loss from granulation is very trifling.

* * *

There is a new wrinkle this year in feeding bees. Where little honey is gathered after the middle of July, there is usually much feeding to be done. We have for many years used a galvanized-iron tank holding about 800 pounds, but the pressure of so much weight of syrup and often of steam when taken to an outyard (for we heat to melt our sugar quickly) makes it difficult to keep it from leaking about the bottom or top. This year, not willing to trust our old tank longer, we have bought cans of five-gallon capacity, made of heavy galvanized iron, with a large opening at the top for filling and a nose for emptying. They have, we find, many advantages over one large tank. We can fill in half the time, and carry the cans right to the hives in the yard and empty into the feeders. With a 75-gallon tank it was necessary to fill the tank on the truck. Now we have the use of the truck so one may go to an outyard and gather up feeders while another is melting up syrup. A good-sized gate in a melting tank enables us to draw off hot syrup into 5-gallon cans without any dripping. There are other advantages I need not mention. These cans can be obtained of the Dover Stamping and Manufacturing Co., Cambridge, Mass.

AS usual, we Ohio-Californians have been experiencing the "very unusual" this September.

Whether because of some law of averages or compensation or just to enable the weather to keep up its record for superlatives this year, the temperature on Sunday, Sept. 17, reached the highest point since 1913, just as last winter occurred the most disastrous freeze since 1913 and the most rain for years. The official thermometer in Los Angeles recorded a maximum of 102 degrees in the shade, that of Pasadena registered 108 degrees, and our west porch thermometer, unofficial but apparently reliable, showed 103 degrees. Our suburb lies between Pasadena and Los Angeles.

If this September is a fair sample I am afraid I shall have to admit that I love "My California" in spite of its September climate, not because of it, although today, Sept. 27, the thermometer is behaving beautifully, has not showed a temperature of more than 76, and the delightful sea breeze is mingling with mountain air, as it should. During those hot days the sea breeze apparently took a long detour across a desert before reaching us, with the result that opening a window was somewhat like opening a furnace door. It is a fact that a thermometer exposed to the breeze recorded a higher temperature than one sheltered from the breeze.

But while I never would advise anyone to visit California in September, or perhaps at any time during the fall, it is not a bad place in which to live. During even the warmest weather the temperature falls well down into the sixties before morning, with just enough exceptions to prove the rule. And on account of the cool nights the interior of the house preserves a surprising coolness until mid-afternoon, even on hot days, especially if most of the windows and doors are closed early in the morning. We always leave part of our windows open, for we are not fond of stale air, even if cool, but we have learned to keep out the hot breezes.

LAST month I believe I wrote that tomatoes and eastern varieties of grapes are not as fine here in California as in the East. I find I must retract. Just a few days after my manuscript had started east a nice beekeeper, living some 25 miles from here, sent us some tomatoes, and then a week or two later he did it again. I measured several and found them 14 inches in circumference; they were as uniform in size and shape as peas in a pod, had a most beautiful tomato-red complexion, were firm and fine flavored and kept well. And the largest Concord grapes I ever saw, both as to

OUR CALIFORNIA LETTER

CONSTANCE ROOT BOYDEN

(Stancy Puerden)

size of individual grapes and bunches, have been on the market for some weeks. I am beginning to believe California-grown fruits, with the ex-

ception of grapefruit, are the finest in the world. Maybe in the future I shall have to retract making that exception of grapefruit; but, although we have enjoyed some very fair grapefruit from Arizona, I don't believe the California article can equal that grown in Florida as yet.

Someone has asked me to describe a nectarine. I should call it a white peach with an apple skin, or the skin might be likened to that of a plum. Those on our tree were delicious, juicy, refreshing, very sweet and with a flavor a little more delicate than the average peach. The skin was apple-green or pale yellow when ripe, and some of them had dark red on one side. We liked them sliced without peeling, and we also used them sliced over such breakfast foods as shredded wheat. Whether they can be successfully grown in the East I do not know, but I remember father had one in our yard when I was a girl. Possibly it did not survive the winters, for I do not think it lived to be a very large tree.

Did you ever hear of roselle buds? They are perhaps a little over an inch long, half an inch in diameter, are striped bright red and green and they grow on shrubs or bushes. A very pretty ruby-red jelly can be made from them, and the flavor is much like that made from currants. They must be very rich in pectin, for the juice jellies very quickly with little boiling.

Speaking of pectin reminds me of the commercial pectin, sold under the name of Certo. I have used it in making jams and marmalades this summer and have tested it in apricot jam made with honey instead of sugar. That made with honey jellied more slowly than when sugar was used, perhaps because the honey added a little more liquid, but it finally became firm. The Certo is a great convenience when making jam of fruits deficient in pectin, such as peaches, and it also enables one to use canned fruits for making jam during the winter. The use of it with strawberries, blackberries and raspberries results in a much finer-flavored jam than usual, as it obviates the necessity for the long boiling which injures the flavor and hardens the seeds.

But for making jelly with roselle buds, grapes, quinces or other fruits rich in pectin I prefer not to use the Certo, and I also think orange marmalade is better without the Certo, as oranges and lemons are rich in pectin. The Certo recipes call for so much sugar that jams made by that method are apt to taste too sweet unless some lemon juice is added.

THE fifteenth birthday anniversary of the only daughter of our family fell on August 30, and as that is also the anniversary of her parents' engagement it seemed fitting that it should be observed by a holiday, although we had some difficulty in persuading the busy man to see it that way. However he did consent to join us if we would let him go down to his office in the city for a few hours, and therefore ten o'clock in the morning found the two Boyden families assembled in Pasadena to take the auto stage, which makes a daily trip up Mt. Wilson. None of the eight who made up the picnic party had been up this particular mountain although at least one of them never looked at the peak, with its gleaming white sun tower belonging to the observatory, that she did not wish she could be there.

Mountains are so full of mystery and illusion. For instance, from our home that white sun tower appears to be at a little distance to the west of a peak rising considerably higher. But we had long noticed that, as we drove to the east, say to Arcadia, the sun tower appeared to be just as far to the east of that peak, and for a time we thought there must be two such towers. Then someone explained that the sun tower is on the highest point, and that the other peak, being between us and the sun tower, appeared higher for that reason.

In previous articles I have alluded to the mountains appearing like a long, high ridge to the north serrated with higher peaks and then, when the lights and shadows are just right or snow picks out the higher peaks, one can see, instead of a ridge, many ridges and peaks, the higher peeping over the lower ones, probably separated by deep canyons and gorges. But when we drive close to the foot of the mountains in the effort to penetrate their mystery the near-by lower ridges hide the distant peaks so we can see less than when we are at a distance.

As the ascent of Mt. Wilson is made by auto stage on the toll road (unless one has strength enough to make the climb on foot) it seemed to me, if we watched closely, we would know all about the shape of the great tilted-up mass of earth which is known as Mt. Wilson. But now I am hoping a future airplane ride will reveal what the drive did not, for Mt. Wilson is still a beautiful mystery to me, and so are Mt. Lowe and Tamalpais, although I have been up both of them.

After leaving the tollhouse the road dips down into a canyon, crosses it on a bridge and then starts up the narrow trail which can be traced for some distance from the valley below. On and up we climbed steadily, curving into unsuspected canyons and clinging to their steep sides, curving out again where we had fascinating glimpses of the valley far below, making frequent "hairpin turns" where a little carelessness on the part of the driver would have shot us off the narrow road into space. These mountain drives always seem to me more

dangerous than airplane rides, for automobiles cannot volplane down if they miss the trail, but I believe accidents are extremely rare. There were places where we could see a section of our own road high above us and perhaps two more sections away below, which we had just traversed.

The nine-mile drive from the tollhouse to the peak is filled with beauty. As we climbed higher the features of the valley below showed only faintly through a violet light, although the day had given promise of being clear. The views of distant mountains were magnificent, the trees and shrubs in the canyons and on the mountain slopes were surprisingly green for the season, and although there were not many shrubs in bloom there were a few which were very fine, many covered with little creamy plumes, like tiny pampas plumes.

We ate our birthday picnic luncheon in a little summerhouse in a quiet grove, which looked quite like an ordinary resort with its little hotel and scattered, tiny cottages for the hotel guests. One might forget that he was on a mountain peak unless he glanced down through the trees and saw the broad San Gabriel Valley spread out over a mile below (6000 feet). Don't laugh at my enthusiasm, you readers who may live near some of the high peaks of the Sierra Nevada or the Rockies. Remember our mountains here rise almost from the sea, and they are satisfyingly high to ex-Ohio eyes.

The temperature on Mt. Wilson averages much lower than the valley, but we seem to carry superlatives with us, for that was the hottest day of the year on the peak up to that time, 88 degrees. But it was altogether delightful. Out on Echo Rock, with the mountain sloping steeply away in three directions to blue depths which made one dizzy, while Mt. San Antonio (10,000 feet) and its neighboring peaks stood out clearly and deceptively close to the east, a wonderful, cool air rose from the canyon depths, air with a woody fragrance.

Of course we went through the museum and enjoyed the pictures taken through the great telescope, and later we were conducted through the observatory in which is the mammoth reflecting telescope, the greatest in the world. We also learned that a professor from Northwestern University has been conducting a series of experiments reflecting light from Mt. Wilson to Mt. San Antonio ("Baldy") to revise figures on the velocity of light waves, and by the end of another summer it is hoped some interesting results may be made public.

But life doesn't permit us to stay long on mountain peaks, either figuratively or literally, and so the time for descending came all too quickly, especially for the nineteen-year-old boy who numbers astronomy among his hobbies and who lingered in the observatory up to the last second. And the fifteen-year-old young lady thinks her mountain peak birthday picnic was the finest celebration she has had yet.

THE State Fair was in progress. In

the honey section at the north end of the Agriculture Building, hundreds of bottles of rich amber honey stood

in rows against the white-covered windows behind. Extractors and hives and uncapping knives told the mysterious story to the great public who do not know. Through their glass sides the observation hives showed bees, three-band Italians or bright five-band Goldens. Ribbons had been awarded—blue ones hung proudly, red ones contentedly, yellow ones quietly; on extracted honey, comb honey, granulated honey, beeswax, honey vinegar, empty brood-combs, the bees themselves and the general grand display.

The crowds surged by. Their questions, perennially funny, about queens and artificial comb and if the bees were making honey, were interspersed with such queries as, Where is the cow made of butter, where are the decorated cakes, where is the apple exhibit? Visiting beekeepers kept turning up at the honey exhibits, always to be welcomed with a quick warm handclasp—here is one of us. Then how the conversation drifted on and on into the things that matter—to a beekeeper: how short the crop was this year—and why—too much rain, with one—not enough, with another—clover killed out by last year's drought; what about foul-broody section honey sweeping in here from the west, with the smeary wooden discard being thrown cheerfully into the alleys because it is summer and there is no fire to burn it and neither the chickens nor the pig nor the family cow will eat it?—well, some day something will be done about shipping out section honey from foul brood territory; what you getting for five-pound buckets?—or what's the prospect for aster?—coming fine—too dry to yield—why, Man, don't you know it rained Wednesday?—ask the Fair management, they know, or the church women running the eating booths, they know—well, here's hoping, my hives are mighty light now—my yard's already beginning to smell sour. And so on and on, all the loved old familiar beesy talk from bee-man to beeman (speaking in generalities).

Then one afternoon, Friday it was, have you seen the live bee demonstration, asked Hardin Foster, the young queen-breeder from Columbia. Mr. Foster had been around before, and the conversation had been appropriately flavored with bees and queens. But this was something new. Live bee demonstration? No, we didn't know there was one. Where is it? In one of the sideshows, I've been told, he answered.

So we went to look it up, three of us. In one of the sideshows. Which one, we wondered, and who was putting it on and what would it be like? Out into the strange

Beekkeeping as a Side Line

Grace Allen

medley that constitutes the side-show feature of a state fair we wandered, past the Dodgem and the Whip and the Ferris Wheel and the Merry-go-round and the

House of Mirth and the Joy Trail and the Old Mill and the Diving Belles; just where in such a conglomeration would one find a live bee demonstration? Finally we reached a long tent affair; freaks, said the Man-of-the-Party, it won't be here, but I better ask. Right here, quoth the ticket seller, who promptly had our sixty cents and we were inside.

A dusky-skinned man was swallowing fire and sending it back out. That was the first thing we saw. The little crowd of side-show devotees was there in front of this fire-eater. But lo, at the far end of the line, in a wire cage, was a small hive of bees and a very normal-looking gentleman writing a letter! Nothing freaky there, thank goodness, we remarked, starting joyfully in that direction. But the pleasant-looking fat man shooed us back. The show goes the other way, he explained gently; and we, feeling it proper to do as they wished, meekly watched the dusky-skinned man swallow more fire. Then came a misshapen little dwarf, but this we dodged, by simply chatting without watching. We have never liked freaks. So I don't know what this one did, nor the next one nor the next. But at last the announcer was calling out that, Now, ladies and gentlemen, Dr. Wood will show you his famous—and we knew, with a little thrill, that there we were, right in front of the cage, and the show was starting. It lasted only a few minutes: first, a little talk on bees, such things as the three kinds and how many eggs the queen lays; then he jarred the bees off a frame into a specially contrived hat, and, making appropriately genial remarks, he donned the hat. Now you see, he said—inevitably—I have bees in my bonnet. He removed the hat. One or two bees remained on his bald head. Went over the top, didn't they? he observed, brushing them off. Now, he went on, I am going to play ball with these bees—want to play with me?—addressing a small boy who promptly shrank back from the cage, shaking his head. Deftly slipping a stiff card under the bees, where he had emptied the hat out, he threw them into one hand, tossed them, decreasing in numbers, from one hand to the other; and the demonstration was over.

We had decided not to show that we knew anything about bees, but to ask some questions and see how they were answered. But somehow we couldn't think of anything to ask. The Man-of-the-Party finally made a brave effort; the demonstrator answered. Then, seeing us still standing there, while

the rest of the crowd had moved on in the direction of—the fat man was next, I believe—he regarded us a moment with interest, then began, there's a woman in Nashville—and hesitated. Who?—what about her? the Man-of-the-Party helped out. Then the live-bee-man said three things, one after the other: first, my name; then, You?—in a swift interrogation; and then, I'm coming right around there. And I'm coming right around there! I answered, and we met by the door. It was like meeting an old friend. Indeed, it was that, really. Gleanings doth make friends of us all.

I was just writing my wife, he said, waving towards the writing materials set aside when his act was called—and telling her I had found your exhibit this morning but couldn't find you, and guessed I wouldn't see you.

I said we hadn't known of the show more than half an hour. And he said he hadn't been there till Wednesday, having been in Coney Island. That was the beginning. We talked on and on. How strange it seemed, thus being chummy with one of the performers in a sideshow. But we were all bee lovers, and therefore friends. Of course, Mr. Woods had met E. R. Root—unhappy the beekeeper who has not! He told us about it—it was while he was with Ringling Brothers—Mr. Wood, I mean, not Mr. Root! I invited him to eat dinner with me under the tent, but he had to join some friends, he reminisced regretfully. He took us around behind, opened a flap at the back and showed us his other small hive sitting on top of one of the big carnival wagons, the bees flying in and out. By using them alternately, he keeps them in good condition.

Of course I asked his story, and he gave me pictures. But the story begins away back when he was seven or eight years old. His father, following the olden custom, had sulphured his bees to get the honey. The boy actually cried. When I get big, he declared, I aint goin' to kill the bees to get the honey.

It was only two or three years later that a catalog came to his father showing hives with movable frames. Promptly his father bought one for the boy; and he has been interested in bees ever since.

His start in the exhibition business was made about 20 years ago, and happened this way. He had 28 or 30 colonies to transfer from old-style hives to new ones. Excessive robbing was making it a mean job. So he built a wire cage and did the transferring within. Then it became easy, became pleasant. He began playing with the bees, doing certain stunts and little tricks again and again. He was delighted with the ease of it all.

I'm going to do this at the County Fair, he told his wife exultantly, it'll make folks open their eyes. He went to the see the secretary of the Fair. Yes indeed, said that gentleman, come on. He went on and met with great success.

One day, there at the little county fair in Pennsylvania, a showman saw him perform, and later hunted him up. I have a string of 20 or 30 fairs, he told him; let me take you on. It's a matter of money, answered Mr. Wood, wisely. I've got it, said the showman. I'll bring my wife tomorrow, said Mr. Wood, wisely, again. They met, they agreed; he started out and is still going. That was more than 20 years ago. Since that talk with the showman back at the Monroe County Fair, he has been all over these United States and into Canada and Mexico. He has shown in Madison Square, New York. Is there anything more to aspire to in the showing line? He hopes his son will continue with the work when he is through. He would rather give his talks and exhibitions before schools and Y. M. C. A.'s, but, as he told the showman years ago, it's a question of money. Perhaps, he says, when the little home is paid for and the children all grown and educated, he will stop going around with shows; there's money in it, but he wants to get home, settle down by his own vine and fig tree and beeyard, and enjoy life, back in Pennsylvania. Or he might go to lower Louisiana and build a houseboat, and float his bees up and down the Mississippi. What dreamers we all are!

Now, ladies and gentlemen, Dr. Wood, the famous King of Bees, will give you— They had gone the rounds again and it was his turn once more! Once more we listened and watched. Once more he joined us outside. I can't give anywhere near all my show, he complained, they give me so little time. But I'm glad I haven't sealed the letter to my wife. I'm going to tell her about seeing you. And we parted.

Are we not all alike, we beekeepers?—lovers of bees, friends of all other beekeepers, and sharing everything with our wives—or, some of us, with our husbands.

November Memories.

Softly down the dim west end
of one November day
Came a lonely birdnote floating
through the silent gray—
Across the fields the calling children
sounded far away.

Bees, no longer questing forth,
rested in the hive.
Rested? Ah, the loyalties
that keep their dreams alive!
On I wandered, wondering—
may all dreams survive?

(Aye, so they be questing dreams,
rapturous and fair!
Aye, so they be beauty-fed,
fanned by wings that care!
Aye, so wings beat loyally
through dark hours or fair!)

No one saw the night come:
something grew more deep—
Day was dusk and dusk was dark
and dark put earth to sleep.
But I, who walked the roads alone,
have memories to keep.



FROM NORTH, EAST, WEST AND SOUTH



In Southern California.—The condition of bees throughout southern California is above normal in amount of stores and freedom from disease. It is always much easier to treat disease in our prosperous seasons, and bees that go into winter with the hives full of honey are less likely to develop disease. We find that the weak, half-starved colonies, that barely get through the winter, are the ones to look out for, so far as disease is concerned.

With the higher class of beekeeping practiced today, the apiarist exercises more skill and care in both the prevention and cure of disease than the old-style beekeeper did. He also has more of that "come-back" ability, as we express it here in the West—that is, he can, in a short time, clean up any disease that might appear, provided the season is at all favorable. He can also increase his colonies rapidly enough to replace any that might have been lost by disease or otherwise.

One of the most unfortunate situations that still remains in too many cases here in the West is the fact that the beekeeper—just as soon as his honey crop is disposed of—turns his attention to other lines, thus neglecting his bees. In some cases no attention is given them until the following spring. This not only leads to a great loss of combs in the colonies that die out from various causes but also gives every chance for disease to be spread among many colonies if any diseased combs are robbed.

The summer weather continued longer than usual in southern California this year, and September proved to be one of the warmest on record. Where there were bloom and moisture, the bees filled their hives well, and most apiaries are in fine condition for winter. Blue curl is very abundant this year, and while it has perhaps yielded more nectar in other years, still the bees have done and are doing well on it. The great profusion of plants makes up in a great measure for any shortage of nectar secretion that there might be.

The market seems to be able to take honey at a certain price, and buyers are shipping right along. We shipped some 200 cases of orange honey last week that the buyer told us was going to Belgium. The market on sage honey seems weaker, and buyers do not seem nearly so anxious to buy it as they do the orange or even the darker grades.

Six, seven, eight and nine cents seem to be about the prices offered. A few of the larger producers are holding, but most of the beekeepers are selling or are willing to sell.

To make the business gain us a living at these prices, one must be conservative and run his affairs just as economically as possible. Supplies of all kinds, as well as labor,

are much higher than when we sold honey at the above-quoted prices before the war.

Honey plants are going into the early winter in excellent condition. A good growth was made during the summer, and, with a normal amount of rainfall this winter, all should be in good condition for next season.

L. L. Andrews.

Corona, Calif.

* * *

In Northern California.—The year 1922 will go on on record as a very poor one. Excepting in the very northern part of the state, hardly any section gave a respectable surplus. Alfalfa was especially disappointing, and in some of the very best alfalfa locations of the San Joaquin Valley there was actually no surplus this season. The fall plants, jackass clover, alkali weed and blue curls in the valleys, are secreting, and during September in some localities there was extracting. Owing to the scarcity of alfalfa honey most colonies were not in a fit condition to reap the benefits of the late honey flow. Along the coast sections, the fall bloom was exceedingly barren of nectar. The wild buckwheat, just as L. L. Andrews pointed out in September "Gleanings," bloomed with us also very profusely, but was altogether lacking in nectar. The same holds true for blue curls.

Between six and seven cents has been the ruling price for light-amber honeys. The demand for honey was much more active a year ago at this time. It is expected, however, among beekeepers and dealers alike, that the market will become firmer and more active within a month or two.

Along the coast counties the yellow-jackets have become an intolerable nuisance. Many of the weaker colonies have been destroyed outright. In some instances colonies with entrances confined to a single bee-space have been overcome, so persistent has been the attack of these marauders. They are so numerous in some sections that it is possible to trap as many as 100 and 200 pounds of these insects about an apiary or honey-house.

Ever since Prof. W. B. Hermes has been in charge of the entomological department of the University of California he has had no easy task in fulfilling the demands made upon him by our rank and file. Our state institution has been hard pressed for funds, which fact has been Prof. Hermes' greatest handicap. As has been announced, Dr. George R. Vansell, formerly of the Universities of Kansas and Harvard, is now a member of our University staff and is in charge of beekeeping at the University Farm at Davis. This is most gratifying news. All of us have realized the need for beekeeping instruction at the Farm. Dr. Vansell has



FROM NORTH, EAST, WEST AND SOUTH



been inspector of apiaries in Kansas and has also been connected with apicultural work in the U. S. Department of Agriculture. His first work is building up an apiary of 50 or more colonies, and students, after having received a certain amount of fundamental work at the university at Berkeley, are then in a position to gain adequate practical instruction at Davis. Ralph de Ong has charge of the beekeeping work at Berkeley. M. C. Richter.

Big Sur, Calif.

* * *

In British Columbia.—In spite of a dry summer and the smoke from numerous forest fires, that veiled the sun and obscured the landscape for quite long periods in many districts and prevented the bees from flying freely, there has been an excellent honey crop in British Columbia this season. In the Fraser Valley, stretching from Vancouver to beyond Chilliwack, a distance of 60 or 70 miles, there has been a much heavier yield than in the other parts of the province.

Four years ago it was hard to find an apiary in this valley that was free from European foul brood. The introduction of Italian bees to replace the blacks, which were then so common, together with improved equipment and better methods of beekeeping, has worked wonders in a short time in eradicating the disease and increasing the crop.

Fifteen Government demonstration apiaries, under the supervision of the apiary inspectors, were established at different points in this territory for educational purposes, and the wisdom of adopting this course has become very apparent in the good results that have been achieved. The average production of the hives under supervision in these demonstration apiaries this season will be about 300 pounds of surplus honey from each. Two hives in two of the apiaries have exceeded the 600-pound mark.

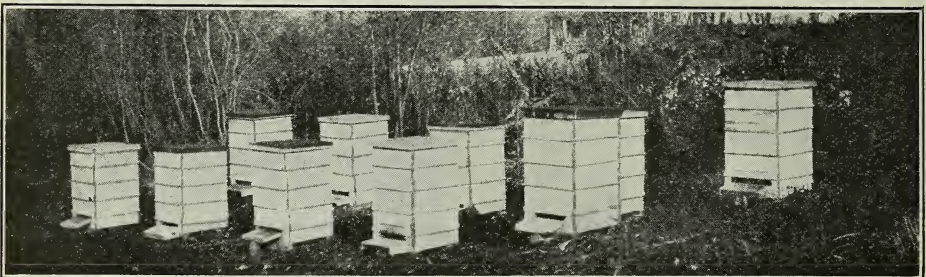
One of these produced 660 pounds and the other 630 pounds, enough honey being left in both for winter stores.

A permanently packed outer case is used in all the demonstration apiaries that have been established in the province, which now total 40. It is proposed to add to this number as soon as the necessary arrangements can be made, so that in course of time the whole province will be covered. The queens, the stipulation being that they should be young queens, are allowed a breeding space of 20 Langstroth frames. It has been found that the outer case, although an additional expense to start with, very soon saves its cost in the extra amount of honey obtained. Colonies so protected winter better and build up much quicker in the spring. There is also less trouble from swarming, as a more even temperature is maintained within the hive. Comb honey can also be more easily produced.

In the Fraser Valley there is usually an early spring flow, mainly from dandelions and the broad-leaved and the red-flowered maples, from which surplus honey is obtained. This is followed by alsike and white clovers, and raspberries, which are grown commercially in many localities, and later by fireweed. The latter grows luxuriantly in most places and yields nectar very freely. In the dry belt of the interior, including the Okanagan Valley, where there is sufficient irrigation, good crops of honey can be depended on from alfalfa, hairy vetch, sweet clover, etc. In the eastern portion of the province, adjoining the Alberta boundary, where the natural precipitation is greater, averaging about 28 inches per annum, there is a wider range of nectar-bearing plants than in the dry belt, such as fireweed and the spreading dogbane (*Apocynum androsaemifolium*). The latter yields a water-white honey, similar in appearance to fireweed, but with a better flavor.

Nelson, B. C.

W. J. Sheppard.



A Government Demonstration Apiary in British Columbia. These are standard ten-frame hives all in permanently packed outer cases. Note that, as supers are tiered up, rims are added to the outer case.



FROM NORTH, EAST, WEST AND SOUTH



In Northern Michigan.—The reports from northern Michigan this season vary considerably, due both to local weather conditions and to the honey plants, the latter of which the great diversity of the soil materially affects.

A very rapid honey flow started early in June from a source not generally known for a certainty. I must admit my ignorance in the matter, although I have tried to ascertain the source. The honey is light amber and somewhat strong. The source in the past has been attributed to the water-maple, often called swamp or spotted maple, but this has been pretty well cut away. Mr. Chapman of Mancelona claims it to be the beech tree bloom. I watched the beech trees this year but saw no bees, although they were heavy with bloom and we have a large crop of beechnuts this fall.

The raspberry bloom was in and out almost before it was realized; then the milkweed plants, which we depend upon for one-half the surplus, was affected by drouth so that only in very favorable localities did it yield more than one-third its quota. The buckwheat areas were spotted—some localities getting none, others a plenty—but the yield was light. The sweet clover is going to play an important part in our honey crop in the future. For the past two seasons it has been sown in large quantities, and even during this season in some sections considerable honey was stored from this source.

Generally speaking, Michigan honey is dark this season. Even in the white clover section of "The Thumb," David Running reports it unusually dark, but the flavor and body are good.

A year ago nearly every beekeeper pailed up his honey and started to sell it locally. Competition was strong. This season several large producers have sold to jobbers. Some have shipped their honey to city markets and will pail and sell it there, while others are selling locally as usual.

All old honey has been cleaned up nicely, and the new honey should start off well. Early sales were not good, due to a superabundance of fruits of all kinds and warm weather. Remember the price set for honey now controls the price for the season. It's a long time till next July, and the consumption of sweets has only just nicely started.

Colonies bred up strong on the light fall honey flow, but were practically destitute for winter stores and required heavy feeding. Those who have not given the bees feed will report heavy losses next spring. I fed 4,400 pounds of sugar to 350 colonies, run for extracted honey. The comb-honey colonies required no feed.

Many forget or neglect to contract the entrances during fall and winter. This is all wrong—a wide entrance allows the air to

circulate around the combs, while a small entrance prevents the movement of the air. Don't forget that windbreak this winter; it's more than half the winter protection.

Plenty of bees, stores and protection spell successful wintering. Take away any one of the three requisites, and it spells failure. Old combs and wax cappings should be rendered out now. Remember how delayed that foundation was last spring, due to not getting off the wax early enough.

East Jordan, Mich.

Ira D. Bartlett.

* * *

In Wisconsin.—Honey is moving fairly well. The worst part in connection with the honey movement is a lack of uniformity in prices. A few beekeepers act independently of all others and are retailing at wholesale prices, and some of these sell for the same price to the consumer as they do to the stores. Another class of honey producers are those who have gotten into the game recently and have no established trade; some of these are cutting prices, as they want to unload fast. This has a bad effect on the honey movement as a whole. The worst part about it is that, if the rest of us also lowered our prices, the other fellow would sell for still less again. The end might be fewer beekeepers, less bees and less honey in the future.

Too much has been said in the past about beekeeping being the very best paying branch of any agricultural work. It is misleading, when tin smiths, carpenters, masons and other skilled laborers are being paid around one dollar an hour just for the skilled labor performed. Surely it requires skilled labor to keep bees, and keep enough of them so that the proceeds will pay the price of skilled labor plus all the other expenses. Yes, we should have more than that, we think, because we are obliged to take bees' stings though we may bear the pain and smile (?). We are also obliged to wear extra clothing and a veil in the hottest weather. Surely this ought to be worth more than other skilled labor. We are very sure that our health in general suffers from bee-sting poison. Surely it requires extra time and energy for our bodies to throw off this extra amount of poison in connection with the regular amount of other body poisons. Those who are big, strong and hardy may laugh at this, but suppose one needs an extra hour of sleep or rest to throw off this poison. We think this time might well be charged up against the bees and honey. We must find ways and means to lower the cost of producing honey, or we shall be working for little or no pay.

Normal colonies are in normal condition here. In our own yards very little requeening was done, and such colonies are not so strong in young bees as they ought to be.



FROM NORTH, EAST, WEST AND SOUTH



We expect some loss from such colonies. We meet such possible losses with our reserves, as we call them; that is, extra increase in the fall with young queens and enough bees to winter in the cellar. These we expect to use in the spring where queens are missing or failing.

Greenville, Wis. Edw. Hassinger, Jr.

* * *

In Montana.—Montana has had the poorest honey crop in its history. Final reports from the different districts in the state indicate that not over a third of a crop will be harvested this year. Numerous reasons are given for the failure, a very small growth of sweet clover, as compared with the usual, probably being one of the largest factors. The thrip, a small insect found in the blossoms of both alfalfa and sweet clover, as well as a very late spring, probably had some effect. Practically the only honey flow which Montana producers had was one in the early part of July when some surplus was gathered. The honey produced is up to the Montana standard of quality.

The beekeeping industry of the state was well represented at both the Billings and Helena fairs by large exhibits of bee products and supplies. Free honey recipe leaflets were distributed by B. F. Smith, Jr., of Fromberg and R. A. Bray of Big Timber. Doubtless a great deal of good was accomplished.

The beekeeping course instituted last year at the Montana State College of Agriculture, with Professor O. A. Sipple in charge, is well under way, and a great deal of interest is being taken in the work. It is planned to hold a large state beekeepers' meeting at the college some time during the winter months.

Judging from the large first-year growth of sweet clover, Montana beekeepers can look forward to a banner season next year.

Big Timber, Mont. R. A. Bray.

* * *

In Idaho.—After a recent trip, covering about 200 miles, among the beekeepers of western Idaho and eastern Oregon, I encountered no one who had taken a large crop. In a few districts, the alfalfa weevil reduced the crop 50, 75 to perhaps 90 per cent; while in other districts, though the weevil prevented the first crop of alfalfa from producing nectar, the second flow was fairly good. In some places where last year the crop was nearly a failure from weevil depredations, this year a fair crop was taken. Where spraying is resorted to, for weevil control, there seems to be such a destruction of minor parasites, such as the thrips, that not only is more hay harvested, but the bloom appears better and probably produces more nectar. In addition to this,

the best control methods include the early cutting of the first crop of alfalfa, which brings the later crops on somewhat earlier.

There has been quite a general tendency to try more or less migratory beekeeping, and some have made it pay; but in some cases, the weevil districts from which bees have been moved, have later yielded quite a honey flow.

A few in orchard districts have suffered loss from spray poison. There has been but little increase made, and over much of the territory there was but little swarming. One producer is testing out Carniolan and Caucasian blood, in an effort to secure more increase, his range being understocked, but to little avail.

Regardless of prices quoted to buyers, nearly all reply that we are one or two cents too high, but there seems to be a general feeling of confidence that, a little later, honey will sell at something like a fair price, though, with the high cost of production prevailing since the war, we are not at all sure that that price will yield a profit to the producer.

All the extensive producers visited, so far as I remember, now use central extracting-plants, equipped with power extractors and steam-heated uncapping knives.

The crop this season consists almost entirely of extracted honey, there being but a very few producers shipping a carload or more of comb honey. The quality is generally excellent, probably being fully equal to the best that has been shipped from this region.

E. F. Atwater.

Meridian, Ida.

* * *

In Pennsylvania.—The fall honey flow in Pennsylvania has been as disappointing as the early flows were. A record-breaking drouth dried up vegetation. In some favored spots golden-rod and asters provided sufficient winter stores of poor quality. In central and southern counties most beekeepers have harvested no surplus and are now feeding sugar to provide winter food.

A great lack of young bees for the winter cluster has resulted because of poor breeding conditions. In this respect young queens of midsummer rearing have shown up decidedly better, by laying more eggs and keeping it up later and under bad conditions, than have older queens. Italian queens surpass black or mixed queens in this respect. At this writing (October 6) many young Italian queens are still laying some eggs, while even young mixed queens ceased egg-production some time ago.

The control of American foul brood is the problem most important in many locations. Some of the county beekeepers' associations are making this the subject for special at-



FROM NORTH, EAST, WEST AND SOUTH



tention. By adopting methods that will interest the careless beekeeper and getting him to join the association they are accomplishing a great thing. The Allegheny association deserves especial mention in this respect. They have the county divided into districts, with a member supervisor over each district. Frequent meetings and demonstrations are held by districts under the management of the supervisor. He also endeavors to interest the beekeeper in such matters as disease control, better equipment and better stock. By this means they have secured the membership of most of the beekeepers of the county. When a man is in the association he is more likely to be a better beekeeper than if outside. The Allegheny County membership is now about 180. Several county associations are preparing for the same kind of work. There are now 22 county associations in Pennsylvania, all very much alive, and a big state association.

Prof. N. E. Phillips, who will succeed me as extension apiculturist at State College, is a well-trained man and highly capable of doing greater things for this field. He deserves the heartiest co-operation of every beekeeper in the state.

The plan for a beekeeping course and research in beekeeping, with adequate buildings at State College, is meeting with the hearty approval of the beekeepers. As soon as election is over every state legislator should be flooded with information about beekeeping and reasons why appropriations for this work in Pennsylvania should be made.

Geo. H. Rea.

Reynoldsville, Pa.

* * *

In Southern Indiana.—In the last letter, I mentioned the great promise from sweet clover. I moved 24 colonies down into the heart of the sweet clover district. There was something like 300 acres of as fine-looking sweet clover as one could ever wish to see. To all appearances the weather was ideal for the secretion of nectar. It was warm, the thermometer ranging between 80 and 90 degrees. An occasional shower kept the ground moist. The bees went to work with a will, storing honey in four or five supers each. All went merrily until, after they had been storing for only about one week, the honey flow stopped as suddenly as it had begun. Instead of the two or three hundred-pound average that was expected, about 75 pounds were received.

I should like to know if sweet clover acts this way in other localities and if any reason can be assigned for it. The land is sour in this locality, and white clover seldom yields. Sweet clover has been planted in quantities in this locality for only about five years. The honey flow has usually been heavy but very short, much like

it was this season. In previous years the weather has been hot and dry and the curtailment of the flow has been attributed to the drouth; but, this year, it was shorter than ever although the weather seemed ideal.

Mr. Brevoort, a large landowner, has a unique and a very excellent manner of utilizing sweet clover to keep up the fertility of the soil. He drills in winter wheat in the regular way in the fall. Early in the spring he sows sweet clover over the wheat fields by merely broadcasting the seed on top of the ground. After the wheat is out in June the clover covers the ground. The next year it comes on with a rush and can be plowed under and the ground put into corn. In this way no time is lost, and a sweet clover crop is grown, a crop being harvested every year. Sometimes the clover is allowed to mature a seed crop and the land again put into wheat. Does this pay? Well, if you could see the enormous crops that are raised on the land thus treated, the question would be answered.

In early July the weather turned hot and dry. The blue vine gave a small flow, but the main crop, smartweed, was cut short on account of the dry weather. The drouth continues up to this writing, October 5. It has been so dry that no flow from asters and goldenrod seemed possible; yet, strange to say, we are having a nice stimulative flow from both. In fact this is the first year I am sure that bees are gathering anything from goldenrod. Although the acreage of this plant is small, enough nectar is coming in so that it shakes from the combs, and the large amount of golden pollen carried in by the bees furnishes additional proof. Therefore, as regards the influence that the weather has on nectar secretion, we are not exactly like the Dutchman, "The longer we liff the less we find, by jimminy, out."

Vincennes, Ind.

Jay Smith.

* * *

In Kansas and Missouri.—Bees in this section, on the line of eastern Kansas and western Missouri, have done very well during the season just closing. There are probably 2500 colonies scattering in, through and around the twin cities of Kansas City, Mo., and Kansas City, Kan., many of which have produced more than five supers of extracted honey (250 pounds). There has been an almost continual honey flow ever since the fruit bloom started, which furnished considerable surplus up to the present time (Oct. 1). Dandelion is one of our mainstays for spring. White clover gave a fine yield this year, followed by a good honey flow of sweet clover, which lasted until nearly Sept. 1. Fine rains last month have started vegetation to growing, and some of the lawns at this



FROM NORTH, EAST, WEST AND SOUTH



writing look like springtime with their covering of late dandelion and white clover. Heartsease is yielding fine, as well as some alfalfa. Asters are being worked, and the bees are still getting something from the late sunflowers and a lot of other late fall flowers. While we had hoped for some surplus from the fall flowers, I doubt if we get it. However, the honey flow on now is very beneficial, as it has started the queens to laying, and there will be an abundance of late emerged bees to go into winter quarters. Some of the hives have as much as five or six frames nearly filled with brood, while the rest of the brood-chamber is being filled with the late nectar.

Most of the crop of honey produced here is extracted, selling for 35 to 50c for a pint jar. Some produce in shallow frames, getting one dollar a frame, and many produce in the tall section on the old-fashioned Baldwin hive (American frame, nine to the brood-chamber). This style of hive, however, is passing out, and being replaced with standard equipment, as the owners of Baldwin hives find it difficult to dispose of their equipment when they want to sell. Roadside selling is a great help in disposing of the local production, but does not nearly supply the demand. New York honey is sold here as well as honey from Los Angeles, Cal. There is one producer here who has built up a very nice business supplying the grocers with comb honey in double-tier cases. He has removed the entire front of the case, replacing it with a one-piece section of glass, which he has neatly secured around the edges of the case with heavy gummed paper in strips that the grocers use to bind packages. This exposes all six sections to the best advantage, and when placed on a piece of mirror makes it look like two cases of sections.

The problem of wintering is met in many different ways here. Some winter on the summer stands, with empty supers on top. Others pack in winter cases. Some use the Buckeye hive with 100% success, others pack with 12 inches of straw in the back and sides, leaving the fronts exposed but fill the super with straw, and provide a windbreak with fine success. One producer in Fort Scott, Kan., winters his bees in the cellar with 100% success. He is from Illinois. Many are learning to supply ample stores in the fall for winter and spring. A live association has been started here, the Heart of America Beekeepers, and an election of officers will be held at the next meeting in October. Live topics are discussed, and speakers well up in beekeeping are eagerly listened to. Much good is being accomplished in better beekeeping and methods of eradicating disease. A good program is being arranged for the next meeting.

Kansas City, Mo. James B. Drury.

In Ontario.—The latter part of September here in Ontario was unusually warm and very dry for the time of year. This made the job of taking off the buckwheat honey crop a much easier one than in some years, since the extractor worked more nicely than in cool weather. On the other hand, it meant careful work at the apiaries to avoid robbing. In placing supers above escape-boards, it was remarkable how the bees could find some little opening that we would sometimes fail to see. However, buckwheat honey was cheap; and as there is no disease at any of the yards where we used escapes, no particular worry was occasioned by the fact that we had about half a dozen supers robbed out, among about 1000 that were escaped.

This reminds me of a note in October Gleanings from Morley Pettit, in which he states that when they wish to feed for winter, they place the supers above the escapes, and then the following day take food to the yard, and at the same operation or at the same time they remove the supers and haul them home on the return trip. I fear he would not have been able to do that in our York County apiaries during the last two weeks in September. Our bees will not clear out of the supers in 24 hours in the fall season. We have about 600 bee-escapes, and in the lot all kinds are represented that I know off, including the Porter and other well-known escapes, and also several in which the cone principle is used. No matter what kind was used, the bees were from two to three days leaving the supers this fall, while in the clover honey flow they were generally out if left over night. As to loading up honey and feeding in the yard at the same time, there would have been "something doing" in our yards this fall if we had tried it; for, as despatches used to say during the late war, there was a "certain liveliness" apparent when we loaded up with honey during that warm weather, no matter how careful we were and no matter how fast we worked. During the hottest weather when we were removing the buckwheat honey, the boys by choice several times left home before daylight and got their load from the apiary before the bees were stirring much, and then got another load late in the evening. It was quite possible to get a load any time, but much more pleasant to be there early and late.

Owing to so much work in getting off the late crop, feeding with us is later than usual, and at this date (Oct. 10) we have just nicely started. However, with the feeders on hand, we can soon feed a good many tons if necessary, so we are not worrying.

While I am at it, I might as well state that I find things much different in another matter of practice than friend Pettit does.



FROM NORTH, EAST, WEST AND SOUTH



I refer to the matter of requeening, in which all cells are cut out but one, this cell being left to make a young queen for the colony. I congratulate him on his uniform success; but I frankly confess that, when I cut out cells trying to leave but one, sometimes I miss some crooked little apology for a cell, tucked away under a bottom-bar or other place where it has no right to be—and needless to say what happens then. When I get some of our helpers to do this work, they generally miss more cells than I do, and that is worse than ever, so far as final results are concerned. Another serious objection to treating full colonies like that in the honey flow is the fact that with us too high a percentage of the queens are lost in the mating flights; and strong colonies, left queenless so long at that time of the year, are a bad proposition to deal with.

[As we understand it, Mr. Pettit does not leave one queen-cell to requeen the colony; but he destroys all queen-cells nine or ten days after taking away the old queen, to prevent swarming, and then introduces a young laying queen. (See *Gleanings*, June, 1922, page 390, and June, 1921, page 341.) By doing this the colony is without a laying queen only while they are building queen-cells. Mr. Pettit does not claim uniform success with this plan; for he says on page 390, June, 1922 issue, "Sometimes we fail, but the plan, if properly carried out, never does."—Editor.]

I wish we had some handy, dependable plan for requeening colonies in a wholesale way, minus the objections that all plans I have heard off to date are afflicted with. Until I hear of this perfect plan we shall, I fear, follow the old way of requeening all colonies that have poor queens as fast as we find them and can give attention to them, and putting up with a loss each spring from failing queens. This loss is altogether too high some years to suit me; but, in the absence of knowing some better way, I shall continue charging this item up to "profit and loss."

Honey is still moving slowly and at various prices. In our own locality I have actually noted a difference of four cents a pound at retail, in distances not exceeding five miles between beekeepers. This is not as it should be; but, under existing circumstances, the matter is a difficult question to deal with. Fruit is still abundant and I feel that, after the glut of fruit is past, honey sales will be much improved. We do little retailing and have refused to sell small quantities at the same price as we made in carlots. While I feel that some have sold altogether too low, yet we must not forget that all farm produce has shared in the general drop in prices. After all is said and done, agriculture in its various phases is

still the basic industry, and, when general lines of farm produce are low, that affects the buying power of all classes, and naturally honey is affected in common with other lines. But if prices should go lower than they are now, "overhead," whatever that means, must be reduced if we are to produce at a profit.

J. L. Byer.

Markham, Ontario.

* * *

In New York.—It has long been customary for many beekeepers in this state to place their bees in the cellar at too late a date. The good derived from a very late cleansing flight does not offset the loss in energy and in stores due to too long exposure. Temperature records since 1906 indicate the date for a last cleansing flight varies according to the location; Northern Plateau, November 2; Atlantic Coast, November 17; other sections are in between these two dates.

When, through telegraphic reports to this office, temperature records indicate that bees have enjoyed a cleansing flight, and when weather forecasts indicate unfavorable weather following, we shall wire the association secretaries that the time is right to put bees in the cellar. The secretaries in turn will notify key men in the various sections of their territory, who will forward word to the individual beekeepers. In this way we hope to conserve the strength of more colonies in New York.

Two of the strongest associations in the Empire State are the Western New York Honey Producers' Association and the Eastern New York Beekeepers' Co-operative Association, Inc. From recent correspondence with officers in these associations I learn that the greatest problem in these important beekeeping sections of New York is marketing. The particular phase of the problem in which the beekeepers are most concerned is one that does not lend itself readily to solution, and that is the matter of price-cutting.

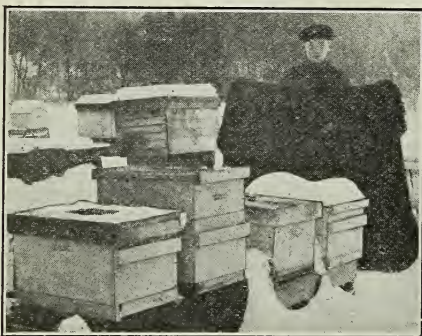
When markets are glutted with any product and one needs cash immediately he may be forced to cut his price to move his crop. The season of berries and other summer fruits is over, and honey is moving agreeably fast. The demand at grocers and roadside markets has picked up, and buyers are active. The tariff on foreign honeys will soon make itself felt. Indications at present point to a clean market by the next honey season, and yet we have here and there a beekeeper who confounds the public by his seeming ability to undersell his fellow beekeepers. More of him later.

Ithaca, N. Y.

R. B. Willson.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Value of Winter Protection. Having increased the number of my colonies, last year, I was short of winter cases, and did not have time to make any. This picture shows plainly how the heat of the cluster melted the snow on the hive covers, even on a double cover, the one nearest in the picture.



Heat from the cluster melts snow on covers. Note depth of snow on the large packing-case.

The dark-colored blanket was held up to show more distinctly just how much the snow had melted on one hive.

Although it does not look like it here, it proved to be a mild winter in this section, so that even these unprotected colonies came through in good shape.

This winter I have more bees than ever, but am fortunate in having a good bee cellar under the dwelling house, where I shall put some of them, rather than leave them unprotected or packed in snow.

Lebanon, N. H. P. N. Townsend.

A Word About the Bee-Smoker. There is perhaps no other tool or implement for the apiarist so necessary as a good smoker. A neighbor wanted to take a swarm of bees out of a frame building recently and had to give up the job because the smoker worked poorly. The best smoker is hardly good enough for the professional beekeeper; yes, and he wants a smoker holding a large amount of fuel. After all there may be a limit to which this feature might be carried. We have used the Jumbo size, 4-inch firebox, 7 inches high. A still larger smoker has been put on the market, 10 inches high or reaching 3 inches above the bellows. We procured it but find it unwieldy. It is too high, and we do not use it except when driven to it. The Jumbo size 4 x 7 is large enough and not too large.

As to the best fuel, sumac bobs may be good, but if they are as good as the Cogshall cartridges I shall be surprised. Old

phosphate or bran sacks, that have taken the drip under the ear, dried, rolled up and cut into cartridges 5 inches long, are the handiest things for that use that we have found.

F. Greiner.

Naples, N. Y.

[This is one of several short articles, still in our files, by the late F. Greiner, whose untimely death was announced in our last issue.—Editor.]

Net Weight Law in New York State. In your August number of Gleanings in the columns entitled "From the Field of Experience," you publish a statement by the late F. Greiner of Naples, N. Y., in which he states that it is necessary to mark the actual net weight on each section of honey sold in New York state. I have a statement from the Director of the Bureau of Weights and Measures, Department of Farms and Markets at Albany, N. Y., stating that such marking is unnecessary. His statement reads: "This Bureau contends that it will be sufficient if the case holding the combs of honey is marked with the number of combs it contains. We do not require that each individual comb be marked as to the amount of its net contents."

New York state comb-honey producers may safely be guided by the above interpretation of the law. It should be borne in mind, however, that honey which leaves New York for interstate commerce must have the net weight stamped on every section. One ounce must be deducted from the total weight for the wood of the section, in order to get the exact weight. It is not sufficient to mark the sections "Not less than 12½ oz." or "14 oz.," but each section must have its own weight stamped on within an error limit of ½ oz. On the shipping case should be stamped the number of sections. This is the Federal law.

Ithaca, N. Y.

R. B. Willson.

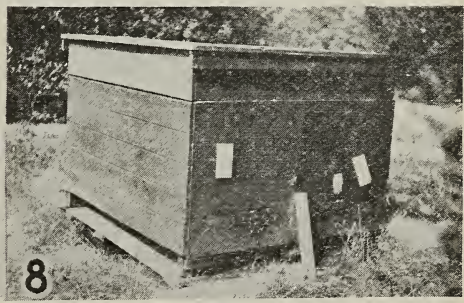
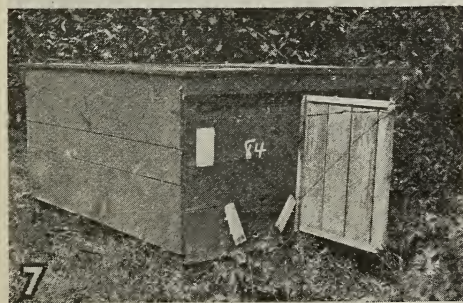
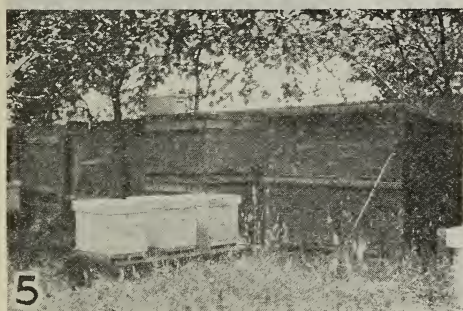
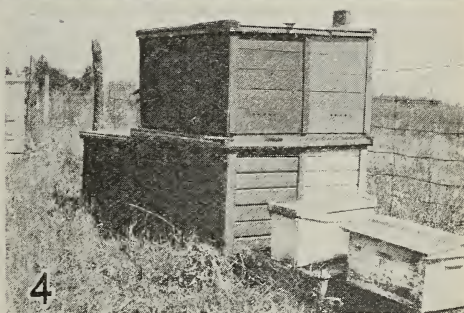
Selling Honey from House to House. Last year I loaded a 20-gallon honey tank, together with scales and

an extra supply of honey, on an automobile and proceeded to canvass the town and country. This was hard work; but in this way I sold all my own honey, helped a neighbor beekeeper to sell his and later I bought seven cases of extracted honey from a beekeeper in another county, which I sold out at auction at community sales. These sales are held semi-monthly in various towns of our county. The honey is put up in one-quart Mason jars and auctioned off at a certain figure.

S. W. Mace.

Middlebury, Ind.

HEADS OF GRAIN FROM DIFFERENT FIELDS



1. 140-colony apiary of Burt Schimmoeler, Ft. Jennings, Ohio. Note shallow extracting-supers (food chambers) painted different color to be sure they are not taken away. 2. Food chambers are tiered up among the supers during the summer. 3. Look like skyscrapers, but they are only extracting-supers being cleaned up after extracting. John Leininger, Ft. Jennings, Ohio, paints the ends of his quadruple winter cases in different colors to prevent drifting. 4. Quadruple winter cases make good storage for packing material during the summer. 5. A row of trees along the roadside causes the bees to fly high when crossing the road as well as forming a good windbreak for winter. 6. An old cover fastened to the front of the winter case prevents drifting. 7. A stake differing in color from the winter case, set between the entrances, prevents drifting.

A SEASON of heavy brood-rearing in northeast Texas has exhausted some queens that are quite young, resulting in supersedure. These queens are swarming in many instances and giving us a fall problem a little out of the ordinary.”
—C. C. Stone, Lamar County, Texas.

“I pack my bees for winter in two stories. In fact, I give them two stories the year around and find that it pays.”—Jackson Davis, Boyle County, Ky.

“I have 25 colonies of bees and secured an average of 100 pounds of white extracted honey from each colony this year. I sell nearly all my honey at retail and get retail prices.”—A. W. Pease, Grand Traverse County, Mich.

“I use two nails in the ends of bottom-bars of frames, nailing one after wiring. I use a stick cut a little short between the end-bars to hold the unnailed one in place while wiring.”—N. H. Craig, Snohomish County, Wash.

“I have just finished extracting 1050 pounds of excellent honey from 7 colonies, spring count, which I increased to 14. I have about 200 pounds of honey which I have not removed and which I intend to keep for spring feeding.”—B. H. Haynes, Dunn County, Wis.

“Comb-honey production under tropical conditions is more than an art, when one considers that nothing short of giving the bees an extra hive-body with full sheets of foundation in the spring will prevent the bees from swarming. Furthermore, they may swarm again when the heavy autumn honey flow comes on.”—Axel Holst, St. Thomas, Virgin Islands.

“I started with three colonies this year, never having seen the inside of a beehive until this spring. I increased to 12 good strong colonies and took 315 finished sections of comb honey and 512 pounds of chunk honey in shallow extracting-frames. I think this is pretty good for a beginner, but I find I know but little about it although I have purchased and read nearly every available book on the subject.”—Harold I. Perin, Custer County, Nebraska.

“Taken altogether, this has been a good year here. With the exception of a few days in the month of August bees have gathered some honey all the season. White clover did not yield abundantly, but it was a fair crop. Many of my best colonies stored two or three supers from it, and some of them more. We have had the best late yield here from Spanish needle, heartsease and goldenrod that I have seen for many years.”
—E. H. Vincent, Ottawa County, Okla.

BEES, MEN AND THINGS

(You may find it here)

“I became interested in Campanilla Blanco, and secured some seed from Mr. Miller of Holguin, Cuba, and planted it here on the island. On Dec. 5

last year it bloomed and continued in bloom about eight weeks. The bees covered it every day and I am satisfied that, if I had had enough of it, it would have given me some Christmas honey. It produced an abundance of seed, and I have about a peck of seed from 15 vines.”—A. P. Applegate, Lee County, Florida.

“I have had the best fall honey flow that I have ever harvested. We had no clover honey to speak of, but have secured from two to four supers of buckwheat and goldenrod honey. We had plenty of rain all summer and lots of white and alsike clover, but it did not yield much.”—D. B. Hill, Mercer County, Pennsylvania.

“It isn’t time to go south from Ohio yet. The good old Buckeye state is good enough for me when bees will swarm six months in the year. I have hived bees in April, but this is the first time I ever was guilty of such a thing in September. On September 28 I hived a swarm that had clustered on a cornstalk. I put in a lot of honey from another hive because the bees were such nice golden fellows that I could not let them go.”—E. L. Seville, Ashtabula County, Ohio.

“Last fall when the last of my bees were packed for winter, the entrance was closed tight on two colonies and this was not discovered until Feb. 4. The weather for three weeks after they were packed was good, and the bees flew freely when they could. One of the closed-tight colonies was in good condition when I discovered it, but the other was a wreck. If our weather had been normal doubtless all would have died, but for 10 weeks we had unbroken cold, and bees were unable to fly.”—E. J. Ladd, Multnomah County, Wash.

“A thousand men with a thousand plans have promised better results in beekeeping in the journals during recent years; but how few tell us anything of how the plans work out. John E. Roebing told of wintering his bees in two-story hives, the brood-nest being above and an escape-board, without the escape, being placed between the hive-bodies. Something like this has been reported as worse than useless, but the idea looks promising for a number of reasons. How did it work? And you, Mr. Many-A-Man, how did your plan work out, be it for increase, swarm control, new equipment, wintering, or introducing queens? I want to know.”—E. F. Atwater, Ada County, Idaho.

THE American Honey Producers' League

will meet at St. Louis on February 6, 7 and 8, 1923. An unusually high-grade program of addresses on honey production and marketing is being prepared, and a large attendance from all parts of the United States is anticipated. The business meeting of the delegates from state and commercial organizations will occupy part of Tuesday and all of Thursday, Wednesday being devoted entirely to the popular program and to committee meetings. The state associations of Missouri and Illinois will also hold special sessions at St. Louis the same week according to present plans.

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The Northern Virginia Beekeepers' Association has just recently been organized. Clinton H. Shockey, Vienna, Va., is the secretary of this association.

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The date for the next meeting of the Oregon State Beekeepers' Association has been set for Nov. 17 and 18. The meeting will be held at Portland, Oregon. Further particulars in regard to this meeting can be had by writing to Prof. H. B. Scullen, Secretary, Oregon State Beekeepers' Association, Corvallis, Oregon.

* * *

Ten of the local associations affiliated with the Wisconsin State Beekeepers' Association have already agreed to make annual contributions to the Miller Memorial Library. These associations are in Richland County, Northwestern Wisconsin, Baraboo Valley, Milwaukee County, Sheboygan County, Marathon County, Washington County, Winnebago County, Price County and Rock County.

* * *

The annual meeting of the Illinois State Beekeepers' Association will be held at the St. Nicholas Hotel in Springfield Dec. 6 and 7. Allan Latham of Norwichtown, Conn., will deliver one of the addresses. Other speakers expected to be present are E. R. Root, C. P. Dadant and Geo. E. King. Further particulars in regard to this meeting may be had by writing to M. G. Dadant, Secretary, Hamilton, Ill.

* * *

The annual meeting of the Chicago Northwestern Beekeepers' Association will be held Dec. 4 and 5, 1922, at the Great Northern Hotel, Chicago, Ills. A representative of the American Honey Producers' League will be present, and a good program is promised. Further particulars in regard to this meeting may be had by writing to J. Frank Haan, Sec.-Treas., Chicago Northwestern Beekeepers' Association, Des Plaines, Ill.



The Iowa State College of Agriculture and Mechanic Arts has issued an announcement of courses for poultrymen, beekeepers and horticulturists, to

be held this winter. The courses in beekeeping, as outlined in this prospectus, are very attractive. Those who contemplate taking a course in beekeeping will do well to write to the Iowa State College of Agriculture, Ames, Iowa, asking for this prospectus.

* * *

The Western New York Honey Producers' Association will hold its annual meeting at the Hotel Statler, Buffalo, N. Y., on Monday and Tuesday, Dec. 4 and 5. An excellent program is being arranged, several speakers from out of the state being scheduled to speak at this meeting. For program and other information write to H. M. Myers, Secretary, Ransomville, N. Y.

* * *

The Wisconsin State Beekeepers' Association will hold its annual convention at Milwaukee, Wisconsin, Dec. 14 and 15, at the Auditorium. The Board of Managers' meeting will be held on the afternoon of Dec. 13 at 2 o'clock. The Wisconsin Products Exposition will be held at Milwaukee, Dec. 14 to 20, and the State Beekeepers' Association will have a Honey Booth at this Exposition.

* * *

The Empire State Federation of Beekeepers' Co-operative Association, Inc., will hold an annual meeting at the University of Syracuse, Syracuse, N. Y., Tuesday, Wednesday and Thursday, Dec. 5, 6 and 7. The meeting will be addressed by prominent beekeepers, and a banquet is being arranged for Tuesday evening to be followed by an illustrated lecture. On Tuesday some beekeepers will be tried by council and judged for not producing more and better honey. Further particulars in regard to this meeting can be had by writing to O. W. Bedell, Secretary, Earlville, N. Y.

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In conjunction with the Mid-West Horticultural Exposition to be held in Council Bluffs, Nov. 13 to 18, the Iowa State Beekeepers' Association is planning a mid-west beekeepers' meeting, which will be of great importance and value to the honey producers of the West. A special program is arranged for Tuesday afternoon, Nov. 14. On Wednesday, Nov. 15, the beekeepers are invited to a meeting with the Pomological Society in joint session, at which time they will be addressed by Prof. L. H. Bailey, their president. In the afternoon a session will be held at the plant of The A. I. Root Company of Iowa.

QUESTION.—Is there any way for the layman to recognize honeydew honey?

F. W. Barthel.
New York.

Answer.—

Honeydew honey usually has a cloudy appearance instead of the clear, sparkling appearance of floral honey. It varies in color from almost clear to very dark or almost black. It can usually be detected by taste, the flavor being somewhat like molasses, and quite unlike floral honey. In case of doubt, a rough test for dextrin can be made as follows: Put about a half pint of alcohol into a flask; then add about half a teaspoonful of the honey known to be pure floral honey and shake the flask to mix thoroughly; then note the degree of milkiness of the mixture. Now test in the same way a sample of what is thought to be honeydew. If the mixture looks like it did in the previous test, it is not honeydew; but if it becomes cloudy and particles of gum are precipitated, indicating a large percentage of dextrin, it is no doubt honeydew.

Detecting Granulation in Comb Honey.

Question.—Is there any method of detecting granulation in comb honey, when it is partly granulated, without damaging it? I can detect badly granulated sections by the appearance or by holding them before a light. J. A. Slatterwhite.
Virginia.

Answer.—By thrusting a needle into the honey and noting the resistance, granulation in comb honey can be detected without spoiling its appearance.

Difference Between Hubam Clover and Biennial White Sweet Clover.

Question.—What is the difference between Hubam clover and the common white sweet clover that we have here? Vona Focht.
Missouri.

Answer.—The most important difference is that Hubam clover is an annual, growing to maturity the first year, while the common white sweet clover (*mellilotus alba*) is a biennial, not blooming until the second year. It is difficult to distinguish between these two kinds of sweet clover when both are in bloom, though this can be done by examining the roots, since the large root of the biennial has a sort of shoulder marking the separate growth of the two seasons.

Amount of Honey Stored by Single Bee.

Question.—How much honey does a single worker bee gather in its lifetime? Willie Rutter.
North Dakota.

Answer.—The amount of honey that a single bee can collect during its lifetime varies of course with the amount of nectar available. It is only those workers which are on hand during the honey flow that are able to gather any considerable amount. Under the most favorable conditions a bee that begins field work at the beginning of a good honey flow might carry in enough nectar to

GLEANED BY ASKING

Geo. S. Demuth

make about 1/6 of an ounce. This would be enough to fill about 15 cells of the ordinary depth in combs spaced 1 3/4 inches. This is counting a sin-

gle worker carrying enough nectar to make 3/10 of a grain of honey at a load and carrying six loads per day for about 40 days. The actual amount gathered by a single bee must be much less than this. When nectar is scarce they carry smaller loads, and the average number of trips per day is probably not more than four or five. If each worker should carry in enough nectar during her lifetime to make 1/6 of an ounce of honey, a colony having 40,000 field workers would store over 300 pounds within six weeks. From this it would seem that during the honey flow of an ordinary season the field workers during their lifetime do not carry in enough nectar to make more than about 1/12 of an ounce of surplus honey, or enough to fill seven or eight cells, and some seasons much less than that.

Ventilation of Hives in Cellar.

Question.—When wintering in the cellar should the covers of the hives be loosened and raised a little at one end or left sealed tight?

New York.

G. B. Talcott.

Answer.—It should not be necessary to provide upward ventilation in this way, provided the temperature of the cellar is high enough to prevent condensation of moisture within the hives. The moisture from the breath of the bees in a tightly sealed hive will pass out through the entrance in the form of vapor as long as the temperature of the inner walls of the hive is above the dew-point (the temperature at which condensation takes place); but if the inner walls of such a hive become chilled below the dew-point, the moisture is condensed on the inner walls of the hive and, later, water may run out of the entrance. When this occurs it takes place first on the hives in the lowest tier where it is colder, and, if the temperature of the cellar does not go too low, condensation may take place only in the hives in the lower portion of the cellar. It is better to prevent condensation by raising the temperature of the cellar than by opening the hives at the top, thus causing a rapid loss of heat from the hive through this opening. If the bees are wintering well they should remain quiet at a temperature high enough to prevent condensation; but if they are not wintering well because of poor stores or some other cause, they become more active and therefore give off more moisture, thus increasing the possibility of condensation.

License for Peddling Honey.

Question.—My local town demands that I pay for a license to sell honey to my neighbors. What

is the law in regard to this? I do not buy and sell honey but want to sell only honey produced by my own bees which are in another state.

Kentucky.

Mrs. Bessie Gildea.

Answer.—It is only by a town or city ordinance that you can be prevented from peddling honey. Most towns and cities having such ordinances permit local producers to sell their products without a license. It will be well to take this up with the town attorney, explaining that you desire to sell your own produce in the town, and ask if a license is necessary under the circumstances.

Ventilation for Bee Cellar.

Question.—Please tell me how to make a ventilator in my bee cellar. It is 9 x 9 x 6.

Ohio.

Vincent Vlk.

Answer.—The usual plan is to make a wooden flue, eight or ten inches square, by nailing four boards together to form a rectangular tube. This tube extends from near the cellar floor out through the roof of the building above the cellar. Such a ventilator should be arranged so it can be closed during the coldest weather to prevent cooling off the cellar too much.

Granulation in Comb Honey.

Question.—How long will section honey keep without granulating?

Colorado.

A. N. Hilliard.

Answer.—This depends upon two things: (1) the source and character of the honey itself, and (2) the care it receives after being taken from the hives. Some comb honey granulates soon after it is stored, while honey from other sources does not granulate within the first year. Alfalfa honey granulates more readily than clover honey, while sage honey and tupelo honey remain liquid almost indefinitely. Usually that which is stored rapidly during the height of the honey flow has less tendency to granulate than that stored slowly near the close of the season. Granulation is hastened by cold weather and fluctuating temperatures, but can be retarded by keeping the honey in a warm room at a constant temperature.

Wintering Bees in a Shed.

Question.—Can bees be wintered successfully by carrying them into a shed and leaving them there during the cold weather?

Wisconsin.

Geo. A. Harper.

Answer.—No. The only advantage of the shed over leaving the bees out in the open would be whatever protection from the wind the shed might afford, and the bees would be denied the benefit of the winter sun shining on the hives on clear days. It will be much better either to put the bees into a good cellar in which the temperature does not go below 45°F., or pack the hives well in winter cases unless you are using double-walled hives, and provide a good windbreak if the bees are not already located in a sheltered spot.

American Foul Brood in Comb Foundation.

Question.—Can American foul brood be transmitted in comb foundation made from wax obtained by rendering diseased combs? I have one colony which contracted American foul brood in combs built from foundation this year, while no dis-

ease can be found in the old combs in the same hive.

Arthur F. Sauer.

Indiana.

Answer.—Apparently American foul brood is never transmitted in this way. In many cases, combs from diseased colonies have been rendered and the wax used in making foundation which was given to the bees immediately without any evidence of disease ever being transmitted in this way. Foundation has been shipped for years into Porto Rico and other regions where no American foul brood exists, without the development of the disease there. In your case no doubt the disease was carried in from a diseased colony in the neighborhood. The fact that it appeared first on a comb recently drawn from foundation means simply that the infection happened to be fed to larvae in that comb first instead of in one of the old combs.

Effect of Heating Honey on Vitamines.

Question.—How can granulated honey be liquefied without destroying the vitamins?

Rhode Island.

S. H. Draper.

Answer.—In heating granulated honey to liquefy it, no doubt some of the vitamins are destroyed; but, if the honey is not kept hot for too long and is not heated above 150°F., the destruction of vitamins is probably very small.

Saving Queen from Diseased Colony.

Question.—Is there any way, this late in the season, that I can save a good Italian queen which is in a colony afflicted with American foul brood?

Ohio.

C. L. Greene.

Answer.—If the colony has not been weakened too much by the disease, you can save not only the queen but the bees as well, by shaking them from their combs and giving them combs filled with honey taken from a healthy colony. Solid combs of honey from an extracting-super are excellent for this purpose. If the colony is quite small, two or three combs of honey will be enough. The hive should then be reduced to fit the colony, the vacant space being filled with chaff-cushion division-boards or a tight-fitting division-board with packing material behind it. If combs of honey are not available the bees can be given a cake of hard candy and confined to their hives for a few days, then given empty combs known to be free from disease and fed sugar syrup for their winter stores. You could also save this queen by killing the queen of another colony and introducing the more valuable queen, but it is difficult to find queens after brood-rearing has ceased. It is possible to change queens in this way in colonies in the cellar in midwinter, but this is not pleasant work.

Storing Extracting-Combs for Winter.

Question.—What is the best way to store empty extracting-combs during the winter to keep out the wax moth.

Iowa.

Ray H. Courtney.

Answer.—Simply pile up the supers of extracting-combs in tight piles in the honey house so the mice can not get in. Exposing the combs to freezing temperatures for a few days will destroy the moth larvae.

JUST now friends, Sept. 26, there is great excitement about the matter of letting up on our prohibition laws. The Literary Digest has been largely instrumental in starting it by about *one million* "straw votes." I suppose they intended, or at least planned, to have it appear they did this just to feel the pulse of the people, or perhaps we should say, the voters; but when the matter was first mentioned I decided the wets would rush forward, recognizing this as their last hope, or, perhaps, we should say, fight in the "last ditch" to get intoxicating liquors back again. The dries—at least a large part of them—showed but little interest in the matter. They were satisfied with the prohibition laws we have already, and felt interested only in a more strict enforcement of them. Well, in this Home paper, coming out just before election, I wish to give a reason for prohibition that I have not seen urged anywhere in any of our temperance literature. Of course, I have not read *all* of it. No person could well read up understandingly all, that is before us on the subject just now. Before I make my plea, let me digress a little.

There is just now a great stir, especially in our cities and large towns, in regard to automobile accidents. A large part of the accidents result from speeding in defiance of our city-limit laws; but the fines have been so light that the authorities in at least many cities have added 10 to 25 days in prison, and this has helped the matter, but still accidents and deaths continue. The deaths are mostly those of children. Our little boys and girls will start across the street, especially near our school buildings, and sometimes in dodging one vehicle they will run right in front of another. Of course we have notices reading "Go slo," giving the driver warning that a school is near; and I think that the law-abiding people do heed these signs and "go slo." Sometimes, however, in the endeavor to meet an appointment, to catch a train, or in case of sickness, they take the chances and pay the fine. I think imprisonment is seldom enforced in such cases. I have been searching the dailies for some time with a desire to find out what part *intoxication* plays in these infractions of law and city regulations. Sometimes just a brief hint is given that the driver was



Thy kingdom come; thy will be done on earth as it is in heaven.—Matt. 6:10.

Be fruitful, and multiply, and replenish the earth, and subdue it.—Gen. 1:28.

I the Lord thy God am a jealous God, visiting the iniquity of the fathers upon the children unto the third and fourth generation of them that hate me.—Exodus 20:5.

forgetting what might happen by letting a drunken man, or even a *drinking* man, run an automobile. I remember, if you do not, how many times in years past drunken men or drinking men have said by actions if not in words, "Who cares?" And his *actiens* often say, "Who cares *what* happens?" Let me give you just one illustration:

A man (or I might say a boy) who had been drinking lay down in front of a train of cars. I pulled him out of danger, and walked a mile or more to get him near his home. In leaving the railway we had to get over a cattle guard. I cautioned him to be careful, and tried to help him; but he told me to get out of the way. He said he could get over it without any help. When I, notwithstanding, tried to keep him from hurting himself he struck me a swinging blow that nearly stunned me, and tried to *run across* the beveled edges of the hard pieces of oak. He slipped down between the wooden guards, just as I expected he would, and bruised his legs so badly that the blood ran down into his shoes. When I expressed alarm at the way he had hurt himself he replied something like this:

"Oh! that's nothing. When a man's 'full,' he does not feel a hurt like that." And he might have added that when a man is full he does not care *what happens*. Now please keep in mind that he uttered a truth that does not seem to be well understood. A drunken man running an automobile does *not* care what happens. He is liable to run into a crowd of women or children, or into a telegraph pole, smash his machine, and cripple the occupants for life or kill them outright; and yet while I write there seems to be, at least among certain people, a kind of indifference that almost amounts to partially excusing a man, *because he was drunk*, when he was driving his machine, and hence was not fully responsible.

Yes, I know that the wets are urging that beer and light wines do not intoxicate.

intoxicated; and then I have watched closely for the penalty. It runs from 10 to 25 days. If the party happens to be well-to-do he pays the fine, and perhaps does the same thing later on. Sometimes where disaster occurs an imprisonment of 10 days is added. But it vexes me to see how easily these recreants are let off. It seems to me that our people at large are

Now, here is another thing the whole wide world just now seems to be forgetting:

In olden times, when the beer sold at corner groceries did not contain very much "kick," there were not only men but boys who would drink a dozen glasses, one after another, in order to get the "kick" they wanted. I know of a man who, on a bet, drank between 30 and 40 glasses of beer inside of half an hour. Our churches and college professors, and God-fearing men and women, are rejoicing at what prohibition has accomplished—more money in the bank, better health, children better clothed, better educated, better nourished, and a thousand things going on to indicate that the time is coming when God's kingdom shall come and his *will* "will be done on earth as it is in heaven."

Now, friends, with the above introduction I wish to suggest to you something still more appalling that comes through strong drink, and this is the thing that, it seems to me, our temperance periodicals and our temperance addresses are forgetting. It is an awful thing for a drunken man to drive an automobile through the streets of our great cities while intoxicated or even partially intoxicated. Our second text refers to the matter of getting married and bearing children. Now, suppose a man or some creature in the semblance of what a man ought to be, should undertake to "replenish the earth" with offspring while intoxicated. Suppose, under the influence of liquor, he should come home and abuse the poor patient wife and mother. I remember vividly a case of this kind—in fact, it was a near neighbor that I was called on to protect, a poor woman, who already was the mother of a large family, from the outrages of the drunken husband. We put him in jail until he was sobered and had promised to do better; but the half-dozen little saloons in our town kept right on doing business supplying him and others of the crowd like him with intoxicating drinks.

While I write, the daily papers are all discussing the matter of what we may call the "carnival of criminals;" and the greater part of these criminals are comparatively boys; and further investigation reveals the fact that at least many of them were born of a drunken parent. Very likely the father and possibly the mother were under the influence of liquor at just the critical time a few months before their child's birth. This is in accordance with what we are told in our last text, that the sins of the fathers follow through coming generations; and it does not seem to have occurred to even the good people of our land that we have got to enforce our prohibition laws for a generation or two before we get entirely rid of this business of breeding criminals.

Pardon me for another little digression. In my boyhood I was much given to poultry

as well as to bees; and we had so much trouble with sitting hens that a new breed called non-sitters was introduced. The Leghorn hens would never or but seldom sit. Now, is it not quite likely that we can get a better breed of humanity—that we can have some children that are not born under the awful curse of strong drink? Being run over with an automobile in the hands of a drunken man in our cities, and maiming a child for life, are awful; but is it not incomparably more awful to bring children into the world, cursed (even before they are born) with a tendency to crime and guilt and murder?

Now, friends, perhaps you will think that my challenge in the above is enough; but maybe what I am about to touch on now is even *worse* than the above. Let me give you briefly one illustration of what I have in mind. The story was told me by the *man himself*, so I think there can be no mistake about it.

Because of a real, or an imagined affront from his wife he went and got drunk on *beer*. While in that condition he visited a place of ill repute where he would have never gone when sober. He there contracted a loathsome disease. It is contagious, and, I might almost say, incurable. Of course he gave it to his poor wife; and if it was not the cause of her death it was contributory. A year or two afterward he married a second wife, and gave her the same malady as a matter of course. Years afterward the children of his second wife were cursed with troubles that physicians pronounced the outcome of that little incident of drinking beer. See our last text. Now, this contagious disease I am talking about was found in some localities in the United States in such a severe shape that it prevented quite a large percentage of the young men from being taken into the army. As I said in the beginning, I do not know that this matter has been recognized as having any bearing on the subject of prohibition; but statistics already show that such diseases are getting to be largely a thing of the past; and do you not agree with me that *prohibition* has already had a lot to do with bringing it about?

May God help us in this coming election to turn in a mighty flood of righteous indignation and stem the current of crime that once more threatens us. Satan sometimes gets desperate, especially when he is crowded into the last ditch; and may God grant that this humble plea of mine for righteousness and temperance and purity may help to give the wets such a stinging rebuke that they may be led to give up their case as hopeless, and that peace on earth and good will to man may rule for the coming ages.

It is my pleasure, in closing the above talk, to be able to present to our readers a thought expressed by that grand, good woman, Miss Francis E. Willard, not long

before her death. I clip it from "The No-Tobacco Journal."

The Right of Every Child to Be Well Born.

Compared with any other law, I hold in highest dignity and most awful significance the law of the descent of inheritance; of pre-natal influence; of the determining of destiny before a human being has ever known an independent heart-beat or an intelligent volition.

I believe that all reforms have their root here, and that a wiser, more thoughtful age, not very far distant, will stand aghast as it reads of the madness of the present dance of delusion and death in respect to the right of every child to be well born.

Mammoth French White Jerusalem Artichokes by the Hundred Acres.

I found by looking on the map that Franklin, Pa., where the "River Ridge Farm" is located, is only a little over 100 miles from Medina, O. So I wrote friend Sibley that we were planning to make him a visit, and asked for directions to reach his farm, for we would probably make the trip there and back in one day by starting very early. He wrote back at once, remonstrating against so short a visit, telling me to come and bring my friends along and stay over night, as he had quite a lot of things to show me. We found the "Farm" located on a small mountain of about 1300 acres. A beautiful automobile road or drive led from the base of the mountain to the summit, where we found a spacious mansion and a wonderful view of the Allegheny River and railways on either side of the shore. The roadway up the mountain is one of the finest pieces of work in the way of road construction (that will stand the storms and frosts of winter) that I ever looked over. All along the route are various cottages. Very good building stone was found in great profusion somewhere near the summit of the mountain, and this stone was cut to accurate dimensions by competent stonecutters, and then just moved *down hill* to where it was wanted. "Entrance Lodge" is a beautiful structure.

One of the prettiest things on the route was what they call the chime of bells, of which I shall have more to say further on. It was so near night when we arrived that I did not have much time to visit the artichokes, but planned to be up bright and early the next morning to look them over. There were not only fields of artichokes, but one of the most beautiful well-kept gardens, growing almost everything a family can want, that it was ever my pleasure to see. A few of the artichokes were about as large as a pullet's egg, and some of these I carried home to plant, even if it was only the middle of August. Not only has friend Sibley experimented with fruits and vegetables, but he has some of the most beautiful flowerbeds in and about his grounds. He has also been a "chicken man"; and not only is there fine poultry but a beautiful duck-pond with ducks and geese by the hundreds. Various kinds of wild game are also to be seen;

and special yards contain pheasants and partridges.

The artichokes, even at the date I mention, were away up high above our heads, and they were already cutting the artichokes for ensilage and also to cure for hay for feeding the horses, cattle and other kinds of livestock, verifying what I told you in our journal for October.

Last, but not least, I want to tell you something more about that chime of bells. But first let me digress a little. When I was about 13 or 14 years old, in order to attend a high school, I spent a winter with an aunt at Wellsville, Ohio, on the Ohio River. Even at that early age I was exploring nature; and one Saturday afternoon, while out in the woods, I got hold of some poisonous plant, and my face swelled up so that my eyes were closed. The doctor said they would have to be bandaged and kept closed for two or three days. So your old friend was virtually "tied up" for a time at least, with nothing to do. My good aunt, however, taught me how to play a little French accordion. She had just got a little music-book along with the accordion, and this book contained an old piece called "Bonnie Doon." I find it now advertised in our list of phonograph records. But in those days while I was blindfolded, I gave the whole neighborhood *Bonnie Doon* until they were probably tired of it. Let us now get back to that chime of bells.

A picture card I hold in my hand tells me there are 11 bells, weighing "from 550 to 3870 pounds," and friend Sibley has penciled on the back of the card as below:

Plays all church and most popular tunes. Played morning and evening each day for one hour. It is one of our best investments in morals.

After we looked over the beautiful structure, a little slip of girl, maybe a dozen years old, was called up to play the chime of bells. The keys to her instrument looked exactly like a lot of pump-handles all in a row. She had to skip back and forth to reach the appropriate keys. The expression to the chime was determined by the amount of force with which the player struck the blow on each bell, and also by the way she kept time. Well, what do you suppose happened? The first piece she played was *Bonnie Doon*! As the entrancing beauty of that wonderful melody reached my poor deaf ears—deaf to most ordinary music—I first uncovered my head as I stood out in the bright sunshine, and then I began to cry; but my tears were tears of joy and not of sorrow. Let me digress a little.

Since Mrs. Root's death I have had a new glimpse of heaven. There is one of the old Gospel Hymns that reads:

I know not the hour when my Lord will come
To take me away to his own dear home:
But I know that his presence will lighten the
gloom,
And that will be Heaven for me.*

*This hymn was my good old father's favorite, and as he drew his last breath on earth I held his hand while I sang the hymn.

Well, I often think of that hymn, and I fear I have been tempted to put the name of dear Mrs. Root first instead of the Lord and Savior. Well, if heaven means another meeting with the dear wife, it would surely be "heaven for me"; and if I am to hear music such as that little girl produced on that chime of bells, that *too* will be beyond any joy I ever expected to feel here on this earth. After she ceased and had gone back home I could not get the memory of it out of my mind; and my kind entertainer, Mr. Hanna, soon called her back again to play Bonnie Doon *once more* for your old friend A. I. Root. Of course I asked questions. I wondered at the marvelous skill of such a child, and inquired who taught her to play. It was the manager's *wife*, and we had the pleasure of meeting *her* too. She said Bonnie Doon was the one piece that she learned to play without written music.

The next thing after the chime of bells was a visit to a little chapel. Friend Sibley has about 35 men working on his 1300 acres, and most of these men have families, and these families constitute quite a little village about the chapel. In this chapel they have a Sunday school every Sunday, and preaching or some sort of address to the people when a speaker can conveniently be secured.

On our way up the mountain I noticed quite a few oil-pumping rigs in operation. I have forgotten how many of them are scattered all over the mountain. A "power-house" conveniently situated operates the pumps, and they are pumping up oil more or less every day. When I inquired how long these pumps had been working like that, they said, about *thirty years*. You will notice in the above this is probably one of the first localities in Pennsylvania to hear of the great oil excitement in 1859; and this oil is probably what furnished friend Sibley the means to get on in fixing up this mountain, and making experiments in the way of agriculture and stock raising for the benefit not only of Pennsylvania but perhaps for the *great wide world*.

The letter below explains itself:

The Artichoke (or Big Thistle) of California.

Dear Father:

Your letter and article about the artichokes came Saturday. It is odd, but I was very much carried away by artichokes on our visit to California a year ago last March. They were in their prime then, and being plentiful and cheap around San Francisco I used to order one every day. Then cousin Amy served them every time we ate at her house. I thought they were the most delicious vegetable I ever tasted, but I find none of the rest of the family shares my enthusiasm for them. I like them boiled and then eaten hot dipped into mayonnaise dressing or melted butter. The leaves should be stripped back until you find some which are tender and then one leaf at a time should be pulled off, dipped into the dressing and eaten as far as it is tender. Toward the center of the artichoke the whole leaf may be eaten, and then at the base, after all the leaves are gone, is the delicious "choke." I had not known enough to eat that part until Amy's husband taught me that it is the best part.

They are grown to the best advantage around San Francisco where there are such frequent fogs, but they are often seen here in private gardens, altho I do not think they are raised commercially. Mr. Dye had a great many plants, and I saw the buds on them when they were all ready to pick. They retail here for about 25c apiece, altho once or twice they were to be found as cheap as 10c. We bought a few once at the latter price, but that is the only time we have tried them since coming here to live. I believe they are much cheaper around San Francisco. I think that article was probably true in all details. I will ask the Dyes if they cut their plants down at certain times of the year. But I am quite sure they do.

Constance Root Boyden.

1301 West Alhambra Road, Alhambra, Calif., Sept. 26, 1922.

Artichokes a Pest, Etc.

My good friends, I have devoted quite a lot of space to raising artichokes, and it would be no more than fair to give something on the other side, and so I submit the following from my long-time friend (a man who is surely *away up* in the agricultural world), the editor of the Rural New-Yorker:

I am very sure that artichokes will become a pest if put into the ordinary garden or field, and given a fair chance. I got my first information about it from John M. Jamison, who formerly lived at Roxabell in your state, who was quite a well-known farmer and writer. I visited his place some years ago, and he showed me how the artichoke had chased almost everything off his farm.

H. W. Collingwood, Editor.

333 West 30th St., New York.

In reply to the above I would say that for almost 50 years they have been saying the same thing about sweet clover; but now it is acknowledged to be one of the best plants, for filling silos for the dairyman, of anything known. (In this issue there is a report of 400 pounds of sweet-clover honey per colony.) From what I saw of artichokes at friend Sibley's place, for silage and for hay, if it is bound to "chase everything off the farm," as Collingwood has it, I would say, let it chase.*

Some years ago, through Gleanings I had quite a little to say about the "helianti" and artichokes; and in order to compare them I had quite a patch of each; and I spoke about them as honey plants because they were so densely covered with bees. When we decided there were too few of the helianti we gave them up. Of course they all went to seed; and the seed and tubers, by cultivation with the cutaway and other tools, were scattered all over the garden. The next spring I was greatly worried, and supposed, of course, they would keep coming; but when the excitement about artichokes started up this season I searched my garden over to see if I could not find a few plants for a further test. Not a plant can be found of either artichokes or helianti

*In a letter from L. W. Lighty, of the National Stockman and Farmer, he says:

"I find all stock readily eat the plants, and sheep are very fond of them. It grows very readily and, if the soil is fertile, the foliage will be heavy, but in poor soil it will be very light. The plants left in full bloom now and have tubers seemingly plentiful, but only on digging them will I know how the yield is."

L. W. Lighty.
Pittsburgh, Pa., Sept. 25, 1922.

anywhere in the garden or in the borders of the garden, or in the neighbors' ground. They have been for years recommended for pigs; and somebody, after he had turned in his pigs and let them root over the ground most thoroughly, found the artichokes came up almost as thick as ever, and they have cut them up with cultivators so there were not "too many in a hill." Let me now digress a little.

A few years ago I was quite enthusiastic about sunflowers, but reluctantly dropped them. In the Farm and Fireside for last May was an article demonstrating beyond doubt that sunflowers are a great and profitable crop for the silo—at least in localities favorable for them. I have not space to give even extracts from that article, but below is the heading:

HOW WE FOUND THAT THE LOWLY SUNFLOWER IS A MILLION-DOLLAR CROP.

At this date, Oct. 10, I am sorry to report that my immature artichokes planted six weeks ago are not growing as they did on the start, probably because they were immature tubers; but some sunflower seeds planted side by side on the same day are now two feet high with leaves nearly a foot across.

A BUSHEL of Artichokes from One Hill.

Read the letter below I just received from Burbank:

The French artichoke is a wonderful producer here on good soil with irrigation, producing usually about one bushel per hill; on poor sandy soil about one-fourth as much. In my new catalog you will find an artichoke of the tender type; that is, the head type (like those they raise along the coast here), which produces magnificent artichokes all through the summer and through the winter when there are not heavy frosts. This is a most *marvelous improvement* of the head artichokes in all respects. Luther Burbank.

Santa Rosa, Calif., Oct. 5, 1922.

"The High Cost of Living."

During the past summer I have been having quite a few calls to give pioneer talks at various beekeepers' conventions, and, in stopping at hotels and restaurants, I have studied the much-talked-of "H. C. L." I have told you already that I always feel guilty when I am obliged to pay, say, a dollar for a single meal; and I always feel guilty likewise in paying \$2.00 or more for a place to sleep. Either Ernest or Huber is with me; and all five of the dear children insist that in my old age I must not take any chances in either sleeping or eating in unsanitary premises. They insist that I must have a good, clean bed, good ventilation, and some kind of heat when the weather becomes chilly; and as I am in the habit when at home of taking a daily bath, this also, usually; and all together, it costs something. But when it comes to meals they agree that I can make choice of the few things that "a little old man" really needs, instead of paying a dollar or more for a meal of victuals. You know I have told you

of Ernest's fashion of going to a good restaurant and having a few simple dishes that cost only a small sum.

Now, instead of finding fault I am going to tell you something that we can all thank the Lord for. On one of the finest streets in the city of Cleveland, Ernest took me into a restaurant only a few mornings ago. I think it is one of the best dining rooms I ever saw; but there were no tables—nothing but a long row of comfortable chairs, with each arm of the chair broad enough to make a fair-sized table. Very neat little placards announced the price of what they had for breakfast. Ernest indicated with his thumb one little card that read "Wheat cakes and sausage, 25 cents." There were four good-sized griddle cakes, light and fluffy, a little pitcher of maple syrup, and two links of excellent sausage, with two good-sized squares of butter. Altho I was hungry there were more of the delicious cakes than I thought best to eat. One link of sausage was all I cared for, and I did not need all of the excellent butter. Only 25 cents for a good big wholesome and delicious meal for a good strong man! Everything was scrupulously neat and clean. There was not a fly in the whole large room, and it made me think of the cars carrying crushed stone that I told you about up in Alpena. There was not a waiter in sight, and, of course, there was no tipping. By the way, Huber told me something a few days ago that I never knew before. He said if you would go into any city dining room and sit down at a little table you would be expected to "tip" the waiter. By the way, I have been opposed to this tipping business all my life. But if you sit down at the counter on a high stool where no waiter is needed except to hand over what you call for, there is no tipping. Some of you may ask about the drink—how about my regular glass of milk? I usually want a little fruit of some kind, and with my cakes and syrup I ordered a large baked apple with a good lot of delicious cream, which cost ten cents more; and so my entire splendid breakfast cost only 35 cents, and I think I could get along very comfortably with just about an even dollar for the three meals of the day, when I can strike good-sized towns where there are up-to-date restaurants.

At one place where we stopped for dinner when we were in a great hurry I asked what they could serve soonest. The waiter replied they could give us a regular "35-cent dinner" right on the instant. This 35-cent dinner was a very good meal—in fact, there were more things than I cared for.

Now, friends, when you are complaining about the high cost of living, do not forget to thank the Lord for what our restaurants, cafeterias, etc., are doing to give us good wholesome food, nicely prepared, many times in not only sanitary, but artistic, surroundings "for a small amount of money."

Classified Advertisements

Notices will be inserted in these classified columns for 50c per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column, or we will not be responsible for errors. For special conditions on bee and queen advertising, please write us. Copy should be received by 15th of preceding month to insure insertion.

REGULAR ADVERTISERS DISCONTINUED IN GOOD STANDING.

(Temporary advertisers and advertisers of small lots, when discontinued, are not here listed. It is only regular advertisers of regular lines who are here listed when their advertisements are discontinued when they are in good standing.)

J. J. Lewis, Edw. A. Reddout, Virgil Weaver. O. W. Bedell, Edgar Williams, J. J. Scott, C. H. Cobb, W. W. Talley, G. H. Merrill, Robt. B. Spicer, S. H. Hailey, J. H. Haughey Co., J. B. Holloper, W. H. Mays, Michigan Honey Producers' Exchange, G. A. Barbisch, J. P. Moore, Ohio Valley Bee Co., W. D. Achord, E. A. Simmons, A. H. Newman, N. Forehand, I. F. Miller.

HONEY AND WAX FOR SALE.

FOR SALE—White clover honey in 60-lb. cans—none finer. J. F. Moore, Tiffin, Ohio.

FOR SALE—Basswood mixed, also buckwheat in new 60-lb. cans. Bert Smith, Romulus, N. Y.

FOR SALE—Fine quality, raspberry-milkweed honey in new 60-lb. cans. P. W. Sowinski, Bellaire, Mich.

FOR SALE—3000 lbs. of white comb honey from alsike clover. Edward Wilson, Whittemore, Mich.

FOR SALE—White sweet clover in cases, two 60-lb. cans, 10c per lb., f. o. b. Joe C. Weaver, Cochrane, Ala.

FOR SALE—Comb and extracted white clover honey. Prices on request. Dr. E. Kohn & Son, Grover Hill, Ohio.

FOR SALE—Clover extracted honey in new 60-lb. cans, 120 lbs. net, \$15.00. A. J. Norberg, Spring Valley, Ill.

FINE quality, well-ripened white clover honey. 12½c per lb. New 60-lb. cans, two in case. J. G. Burtis, Marietta, N. Y.

FOR SALE—Send for sample of new clover-basswood honey in new 60-lb. cans. J. N. Harris, 502 W. Center, St. Louis, Mich.

FOR SALE—White, amber and buckwheat honey in new 60-lb. cans and 5 and 10 lb. pails. H. B. Gable, Romulus, R. D. No. 2, N. Y.

Wisconsin-Hassinger-Clover-Basswood-Extracted-Honey. Qualifies superior flavor and density. E. Hassinger, Jr., Greenville, Wis.

WRITE for prices on a case or carload of new clover honey. Sample 10c. C. S. Engle, 1327 23rd St., Sioux City, Iowa.

FOR SALE—12,000 lbs. of choice white clover honey, well ripened, put up in new 5 and 10 lb. pails. Sample 25c. W. B. Wallin, Brooksville, Ky.

FOR SALE—Comb honey gathered from fall flowers, very nice. 20c per lb. by case. Write for quantity prices. C. C. Hoover & Sons, Andover, Ohio.

FOR SALE—Clover or buckwheat honey in new 60-lb. cans, by the case or ton. Woodward Apiaries, Clarksville, N. Y.

GOOD white honey. Tell us what you want. Price and sample on request. A. I. Root Co., 230 W. Huron St., Chicago, Ill.

FOR SALE—Clover, amber and buckwheat honey in 5-lb. pails and 60-lb. cans. C. J. Baldrige, Homestead Farm, Kendaia, N. Y.

FOR SALE—New white clover honey of the finest quality in 60-lb. cans and 5-lb. pails. Sample, 20c. A. S. Tedman, Weston, Mich.

CLA-FO-NY quality honey, clover, 2-60's \$15; 15-5's, \$11.50; buckwheat, 2-60's, \$12; 15-5's, \$9.75. Sample, 15c. Clarence Foote, Delanson, N. Y.

FOR SALE—Fall honey, amber and dark, in standard cases. Price reasonable. Also 40 Demuth winter packing cases. H. E. Crowther, Jefferson, Ohio.

FOR SALE—Choice new clover extracted honey put up in new 60 lb. cans. Write for prices, stating quantity desired. W. M. Peacock, Mapleton, Iowa.

FOR SALE—White honey in 60-lb. cans, also West Indian in 50-gal. barrels. Samples and price on request. A. I. Root Co., 23 Leonard St., New York City.

FOR SALE—No. 1 white comb honey, 24 sec. per case, eight cases per carrier. \$5.50 per case f. o. b. Penfield. Also extracted honey. J. F. Coyle, Penfield, Ill.

FOR SALE—Extracted white clover honey. 12 5-lb. pails, \$9.50; case two 60-lb. cans. \$14.40; buckwheat, two 60's, \$10.80. Seward Van Auker, Duaneburg, N. Y.

CLOVER honey in new 60-lb. cans, two cans to the case, 11c per lb. Buckwheat honey in barrels, 150 lbs. each, 10c per pound. Sample, 10c. R. V. Cox, Sloansville, N. Y.

HONEY FOR SALE—In 60-lb. tins. Water-white orange, 13c; white sage, 12c; extra L. A. sage, 10½c; buckwheat, 10c, etc. Hoffman & Hauck, Woodhaven, N. Y.

PALMETTO HONEY, light in color, heavy in body. Flavor can't be excelled. In 53-gal. bbls. 9c a lb.; 10-lb. cans. \$1.25 f. o. b. Punta Gorda. Sample 10c. F. H. Nelson, Harbor View, Fla.

FOR SALE—North Michigan clover honey in new 60-lb. cans, two to a case, at 11c per lb. in 5-case lots. Prices on smaller lots on application. also sample. J. H. Corwin, Merritt, Mich.

FOR SALE—White clover honey in 60-lb. cans and 5-lb. pails, this year's crop, none better. Write for prices. Sample, 10c. F. W. Summerfield, Waterville, Ohio.

FOR SALE—Very best clover basswood honey. Produced in new combs. Packed in new containers. 60-lb. cans and 5-lb. pails. Sample, 20c. Write for prices. A. C. Ames, Weston, Ohio.

RASPBERRY HONEY—In 60-lb. cans, 2 in a case for \$14.40; one in a case, \$7.50. Sample by mail, 20c, which may be applied on order for honey. Elmer Hutchinson & Son, Lake City, Mich.

OUR 1922 crop extracted honey is a very fancy grade, water white clover, which was left on the hives until thoroughly cured by the bees before extracting, making it very heavy bodied. This thick, rich honey is all packed in new 60-lb. cans, two to the case. Of course, we have to ask a little more for honey of this quality than ordinary honey. When in need of a good article send a dime for a sample, and address your inquiry to D. R. Townsend, Northstar, Mich.

HONEY—Clover and buckwheat in 60-lb. cans and 10-lb. cans. Write for reduced prices. F. W. Lesser, Fayetteville, N. Y.

FINEST clover honey in 60-lb. cans, per case of 120 lbs. net, 15c lb. f. o. b. Malinta, Ohio, in 5-lb. pails, \$1.20 each, prepaid in 3rd postal zone. No C. O. D. orders. C. J. Appeldoorn, Malinta, Ohio.

EXTRA quality white honey, \$7.20 per 60-lb. can; 14c per lb. in 10-lb. cans on 6 or more cans. 10 lbs. prepaid, \$2.00 in third zone, 20c extra each additional zone. Absolute satisfaction. F. W. Lesser, Fayetteville, N. Y.

FOR SALE—Finest quality white clover extracted honey, well ripened and of fine flavor, put up in 60-lb., 12-lb. and 2½-lb. cans, and 10 and 5 lb. pails. R. C. Ortlieb, 29 Van Buren St., Dolgeville, N. Y.

OUR 1922 crop of white clover extracted honey is now ready for the market. New cans and cases. Say how much you can use, and we will be pleased to quote you our very lowest price. E. D. Townsend & Sons, Northstar, Mich.

FOR SALE—Choice clover extracted honey in new 60-lb. cans and cases. Write for prices on carload or case lots; comb honey in Danz. and beeway sections. Packed in six or eight case carriers. Quality unexcelled. J. D. Beals, Oto, Iowa.

HONEY—Best quality clover or buckwheat, 12 5-lb. pails, \$9.00 at our station; 2 60-lb. cans, \$15.00. 5 lbs. delivered within third zone, \$1.20; 10 lbs., \$2.00, net weight. **GUARANTEED ALWAYS RIGHT.** Write for prices on larger quantities. Earl Rulison, R. D. No. 1, Amsterdam, N. Y.

CHOICE extra fancy white clover honey in new 60-lb. cans, 120 lbs. net, \$14.00. Sample, 20c. Write for prices on larger quantities. 100 cases extra fancy Hubam clover honey, same price. Also fancy comb honey, \$5.00 per case 24 sections, 8 cases to carrier. Edw. A. Winkler, R. D. No. 1, Joliet, Ill.

FOR SALE—No. 1 white comb honey, \$6 per case; No. 2 white comb, \$5 per case of 24 sections; dark comb, dollar per case less; 24-case lots, 50c per case less. Amber and dark extracted, 10c per pound, two 60-lb. cans to case. Amber baking honey in barrels, 8c per pound. Discount on extracted in quantities. H. G. Quirin, Bellevue, Ohio.

FOR SALE—We can supply honey to beekeepers or other roadside sellers who may need to buy beyond their own supply, packed as follows: 2½-lb. friction top tin cans, 1 dozen in case; 5-lb. friction top tin cans, ½ dozen in case; 10-lb. friction top tin cans, ½ doz. in case; 60-lb. square cans, 1 to case; 60-lb. square cans, 2 to case. We have the following kinds of honey: Standard white, alfalfa, sweet clover, California sage, California orange, light amber, amber. Write for prices. The A. I. Root Co., Medina, Ohio.

HONEY AND WAX WANTED.

WANTED—Honey, bulk comb, section and extracted. O. D. Gosnell, Coalmont, Ind.

WANTED—Comb and extracted honey. Fancy yellow wax. C. J. Morrison, 750 Cottage Grove Ave., South Bend, Ind.

WANTED—Honey, basswood or light amber in bulk. Send sample. Quote price. Walter S. Knight, Dravosburg, Pa.

WANTED—Honey in ton lots or less. Comb, and white to amber extracted of good flavor for bottling. Send sample and price to S. G. Crocker, Jr., Roland Park, Baltimore, Md.

WANTED—Honey in ton lots, comb and extracted of all kinds. Send sample. State price. Joe Mlinarits, 8927 Keller St., Detroit, Mich.

WANTED—Comb and extracted honey, carload and less. All kinds of honey and beeswax for sale. Walter C. Morris, 105 Hudson St., New York.

BEEWAX wanted. Old combs (dry) and cappings for rendering. Also wax accepted in trade. Top market prices offered. A. I. Root Co. of Iowa, Council Bluffs, Iowa.

OLD COMBS, cappings or slumgum wanted for rendering by steam press process. We pay cash for wax rendered, trade for supplies, or work it into foundation. W. T. Falconer Mfg. Co., Falconer, N. Y.

OLD COMBS WANTED—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings or slumgum. Send for our terms and our 1922 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Ill.

FOR SALE.

FOR SALE—7 winter packing-cases, A-1 condition. D. C. Gilham, Schuylkill Haven, Pa.

POWER circular rip and cutoff hive-making saw, \$35. Clarence Foote, Delanson, N. Y.

HONEY LABELS—New design. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE—"SUPERIOR" FOUNDATION. "quality unexcelled." Let us prove it. Order now. Superior Honey Co., Ogden, Utah.

PORTER BEE-ESCAPES save honey, time and money. For sale by all dealers in bee supplies. R. & E. C. Porter, Lewiston, Ill.

WORTH \$\$\$ to you. Make your own frames. Save one-half. Non-sag thin top-bar. New feature. Sample, 10c. D. S. Hall, Marshfield, Vt.

FOR SALE—At a bargain, 200 Texas aluminum honeycombs, new. 50 aluminum honeycombs, slightly used. L. L. Forehand, Ft. Deposit, Ala.

FOR SALE—Hubam clover seed grown in rows and kept perfectly clean, therefore absolutely pure. 50c per lb. f. o. b. Holgate, Ohio. Noah Bordner, Holgate, Ohio.

FOR SALE—Good second-hand 60-lb. cans, two cans to case, boxed, at 60c per case, f. o. b. Cincinnati. Terms cash. C. H. W. Weber & Co., Cincinnati, Ohio.

FOR SALE—A Given foundation press, size 9 x 15 inches, in as good condition as if new. Also 50 or 60 swarms of bees and a lot of surplus hives and combs. Lyman Reed, 25 Vosberg St., Iliion, N. Y.

OPPORTUNITY, nearly new factory building, fully equipped for manufacturing beekeepers' supplies. Building is 40 x 70 feet, besides engine room, two story, electric lights, steam power and heat, on main line D. L. & W. and Rochester Division of Erie. Owners will sell at bargain and on right terms, as have no use for it, being engaged in other business. Communicate with Gledhill & Putnam, Inc., Avoca, N. Y.

WANTS AND EXCHANGE.

WANT good used Barnes saw table, saws and dado-head. A. J. Heard, Bonaire, Ga.

WANTED—Foundation mill. Rolls must be in perfect condition. The Stover Apiaries, Mayhew, Miss.

WILL exchange bees and queens for an automatic twelve-gauge shotgun. Oscar Mayeux, Hamburg, La.

WANTED—Comb-back chairs, also old rockers and chests with drawers. John Rick, 434 Oley St., Reading, Pa.

WANTED—Old combs and cappings for rendering on shares. Our steam equipment secures all the wax. Superior Honey Co., Ogden, Utah.

BEESWAX WANTED—For manufacture into SUPERIOR FOUNDATION. (Weed Process.) Superior Honey Co., Ogden, Utah.

WANTED—Shipments of old combs and cappings for rendering. We pay the highest cash and trade price, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

WANTED—Beeswax. We are paying 1c and 2c extra for choice yellow beeswax and in exchange for supplies we can offer a still better price. Be sure your shipment bears your name and address so we can identify it immediately upon arrival, and make prompt remittance. The A. I. Root Co., Medina, Ohio.

BEES AND QUEENS.

HARDY Italian queens, \$1.00 each. W. G. Lauver, Middletown, Pa.

FOR SALE—18 stands of good Italian bees. Mrs. M. E. Andress, Larned, Kan.

FOR SALE—Italian queens, nuclei and packages. B. F. Kindig, E. Lansing, Mich.

GOLDEN Italian queens, untested, \$1.00; six, \$5.00. E. A. Simmons, Greenville, Ala.

EIGHT colonies of Italians. Wired frames, \$50.00. W. J. Hussey, Mt. Pleasant, Ohio.

FOR SALE—100 colonies bees. For particulars, write John Haney, Dodge City, Rt. B, Kan.

SEE our ad and prices on page 777. Loveitt Honey Co., 602 N. 9th Ave., Phoenix, Ariz.

FOR SALE—Eight colonies bees. 8-frame hives, plenty stores. No disease, \$5.00 each. Quincy Hart, Gentryville, R. F. D., No. 1, Ind.

LATE QUEENS—For late queens send me the order. Pure three-band Italians. No disease. Low prices. D. W. Howell, Shellman, Ga.

FOR SALE—150 colonies bees, 20 acres fertile Florida land in tupelo belt, fine location, climate, equipment. Cheap. W. I. Keiter, Cherrydale, Va.

"SHE-SUITS-ME" queens, line-bred Italians, \$1.50 each; 10 to 24, \$1.30 each. See back cover of January number. Allen Latham, Norwichtown, Conn.

GOLDEN Italian queens for sale. One queen, 90c; 6 queens, \$5.00; 12, \$9.00; 100, \$65.00. Safe arrival and satisfaction guaranteed. J. F. Rogers, Rt. 3, Greenville, Ala.

QUEENS—For summer and fall. Write for prices and guarantee, state quantity desired and when shipment wanted. I can fill your orders. J. L. St. Romain, Hamburg, La.

FOR SALE—300 colonies of Italian bees in Root hives. Also 20 acres of land, good dwelling, located in one of the best bee sections in the country. Will take \$2000 for property, and \$8.00 a colony for the bees. Will sell as many colonies as party wishes. Good terms, part cash. John Griffith Co., Floresville, Texas.

WE are booking orders now for spring delivery for the famous "Colorado Queens." Send your order early so as to be sure to get your queens. C. I. Goodrich, Wheatridge, Colo.

POOLE'S three-banded Italian queens are guaranteed to arrive safely and give satisfaction. Untested, 80c each; 25 or more, 75c; tested, \$2.00. Rufus Poole, Greenville, Ala.

I AM booking orders now for next spring delivery, 3-frame nuclei and queens at the same price as this year, Caucasian or Italian race. Peter Schaffhouser, Havelock, N. C.

BEES BY THE POUND — Also QUEENS. Booking orders now. FREE circulars, giving details. See larger ad elsewhere. Nueces County Apiaries, Calallen, Texas, E. B. Ault, Prop.

GOLDEN QUEENS that produce large beautiful bees, solid yellow to tip, very gentle and prolific. Untested, \$1.25 each; select tested, \$3.00 each; breeders, tested, \$5.00. Dr. White Bee Co., Sandia, Texas.

FOR SALE—Leather-colored Italian queens, tested, until June 1, \$2.50; after, \$2.00. Untested, \$1.25; 12, \$13.00. ROOT'S GOODS, ROOT'S PRICES. A. W. Yates, 15 Chapman St., Hartford, Conn.

IF GOOD bright Italian queens are wanted by return mail, send your order to M. Bates, Greenville, Ala. Price, \$1.00 each; \$10.00 per dozen; \$75 per 100. Pure mating, safe arrival and satisfaction guaranteed.

FOR SALE—Bees, 1 to 50 colonies, no disease. Supers and complete hives, foundation, if wanted, and a number of other bee supplies. Send your order. 8-frame supplies. Will sell for best offer. Hickory Shade Apiary, Otterville, Mo.

FOR SALE—85 colonies of bees in standard eight and ten frame hives. The hives are practically new. Also bee-house, smoke-house, capping-melter, honey-tanks, wax press, extractor, etc. John Santens, Box 176, Hazelhurst, Pa.

BRIGHT ITALIAN QUEENS—\$1.00 each. 10% less in dozen lots. Pure mating, safe arrival and reasonable satisfaction guaranteed in U. S. and Canada. Write us for prices on packages bees. We have them in season. Graydon Bros., Rt. 4, Greenville, Ala.

LET me save you money on your 1923 package bees, nuclei and queens. Book early and not be disappointed. Queens balance of season, 85c; 6 or more, 65c; after Oct. 20, \$1.00 straight. Everything guaranteed. J. L. Morgan, Tupelo Honey Co., Columbia, Ala.

PACKAGE BEES for 1923—Italians, \$2.00 per lb. Tested queens, \$1.50 each. Frames of brood, \$1.50 each. Mixed stock, 10% discount. Liberal discount for large orders or late shipments. No disease. T. W. Livingston, Norman Park, Ga.

IF you're in the market for bees for April, May or June, 1923, delivery, write me, no matter how large or small your wants are. I can save you money and deliver you the goods. Let me hear from you. Emile J. Beridon, Jr., Mansura, La.

FOR SPRING DELIVERY, 1923—Italian bees and queens, equal to any, in 2-lb. packages, with queen, \$4.00. 2-lb. package, no queen, \$3.00. No disease. Health certificate with each shipment. Satisfaction guaranteed. Now is the time to have your order booked. J. L. Leath, Corinth, Miss.

PACKAGE BEES—2000 big, strong, healthy colonies will be ready to supply PACKAGE BEES in the spring. Italian or Carniolan QUEENS. Let me quote prices and book your order early. A small deposit reserves shipping date. Circular free. J. E. Wing, 155 Schiele Ave., San Jose, Calif.

FOR SALE—50 colonies or more of Italian bees in 10-frame L. hives and wired combs. Woodward Apiaries, Clarksville, N. Y.

FOR SALE—100 colonies of Italian bees. Good reason for selling. No disease. Write for particulars. Wm. C. Rinehart, Mt. Aetna, Pa.

FOR SALE—1000 colonies bees, 10-frame Langstroth hives, fully equipped for comb and extracted honey, auto truck, big warehouse, located at Laurel, Montana, one of the best honey-producing sections in Montana; \$7.50 per colony, with or without locations. Weber Brothers Honey Co., Blackfoot, Idaho.

ITALIAN BEES—Brood and young queens for delivery April 15 to June 15. One frame emerging brood and bees, one extra pound of bees, one young Italian queen, all for \$5.00, 25 or more, \$4.75, 50 or more, \$4.50. Bright three-banded stock only, no disease, safe arrival and satisfaction guaranteed, 25% deposit to book order. R. S. Knight, R. F. D. No. 2, New Orleans, La.

PLACE your early orders now for queens and package bees. Golden Italian and Caucasian queens, April 1 to May 15, 1923. Untested, 1, \$1.50; 12, \$15.00; 25, \$1.00 each; 2-lb. package bees, \$5.00; 3-lb. package, \$6.50; 20% off above prices after May 15. Golden Italian breeders, \$15.00 to \$20.00. Safe arrival guaranteed. Terms, 25% with order. Sarasota Bee Co., Sarasota, Fla.

PACKAGE BEES—Now booking orders for spring delivery; superior Italian queens and bees, three-banded, leather-colored; thoroughbred; specialty of 3-frame nuclei with queen, \$6.50 each; 25 per cent books order, balance payable just prior to shipment; satisfaction and safe arrival guaranteed. Ten or more nuclei with queen, \$6.00 each. C. M. Elfer, St. Rose, La.

PACKAGE BEES FOR 1923—Three-band Italians, bred for business. A 2-lb. package of the Yancey hustlers with a select untested queen for \$5.00; 25 or more, \$4.75 each. Attractive prices on large lots. One-fifth cash books your order. Order early and make sure of shipping dates. We do not accept more orders than we can fill promptly. Caney Valley Apiaries, Bay City, Texas, Yancey Bros., owners.

AFTER 30 years in the bee business, I wish to retire and offer my entire lots of bees, 2100 colonies, well located, in the alfalfa and sweet clover district. Free from disease, equipped for comb and extracted honey. Also a modern fire-proof warerom, 40 x 60, also a modern 7-room house. oak floors throughout, hot water heat and full basement. All located on Main street adjoining the business district, paved streets. Part cash, balance terms to suit. Bert W. Hopper, Rocky Ford, Colo.

FOR SALE, 1923. PACKAGE BEES—All bees are shipped on standard Root frame, emerging bees with honey, April 25 to May 30. 2-lb. package three-banded Italians, \$5.50; 3-lb. package, \$6.50; 4-lb. package, \$7.50. June 1 to 30th: 2-frame nuclei with untested queen, \$5.00; 3-frame, \$6.00; 4-frame, \$7.00. An untested queen with each package or nucleus. Safe delivery guaranteed, free from any contagious bee disease. Certificate will accompany each shipment. No shipment of bees by parcel post. Send 15% to book order. A. J. Lemoine, Moreauville, Box 55, La.

BOOKING ORDERS FOR MAY DELIVERY, 1923—My introduced-laying-enroute queens and packages, one good, vigorous, young queen, 1 standard Hoffman frame of emerging brood and adhering bees, and 1 additional pound of bees; price, complete, f. o. b. Bordelonville, \$5.00. Additional frames of brood or additional pounds of field bees to make larger packages, \$1 each respectively in above package. Bees and queen Italian. Queens introduced and laying enroute to you. Health certificate attached. Safe arrival and satisfaction guaranteed. One-fifth cash books order. Send for circular and names of satisfied customers in your state. Complete references given. Jes Dalton, Bordelonville, La.

FOR SALE—Bright Italian queens, 1, \$1.00; 12, \$10.00; 100, \$75.00. Safe arrival guaranteed. T. J. Talley, Greenville, R. D. No. 3, Ala.

MISCELLANEOUS.

OLD TIME wool socks, home knit, ribbed; black, blue, slate, grey, green heather. Single pair, 75c; three pairs, \$2.00, prepaid. Mrs. G. M. Jeffus, Crockett, Texas.

THE BEE WORLD—The leading bee journal in Britain, and the only international bee review in existence. It is read, re-read and treasured. Will it not appeal to you? Specimen copy free from the publishers. The Apis Club, Benson, Oxon, England. Send us a post card today. It is well worth your little trouble.

MEDICINAL roots and herbs are very profitable to grow. We especially recommend growing Golden Seal which with good care will yield as high as \$10,000 per acre for each crop. It takes several years to mature but will average \$1000 a year. Special Crops, a monthly paper, tells how. Sample copy, 10c. \$1.00 per year. Address Special Crops Pub. Co., Box "G," Skaneateles, N. Y.

HELP WANTED.

WANTED—On a large farm, a man of energy and experience to take full care of bees, and during season of the year when bees do not require attention to do other work. Home apiary is on a state road and bee man must be a person of good address and a good salesman, neatness and accuracy essential. Records of colonies kept. Salary \$20.00 per week. Good house equipped with running water, furnace and electric light fixtures, rent free. Do not apply unless you would be interested in developing the business and would come intending to stay. Address Mount Hope Farm, Williamstown, Mass.

TRADE NOTES.

Inasmuch as we expect to discontinue listing the following articles in our general catalog we are offering them at a big reduction in order to close out present stock:

14	C472802—Root capping-melters, price each	\$12.00
15	C472803—Dadant uncapping-cans, price each	13.00
14	C472808—Boardman solar wax-extractors, price each	19.00
50	C271801—Demuth winter cases complete, nailed, slightly shopworn. Price each .....	.50
60	C261602—Metal top telescope cap covers with inner cover, 8-frame, K. D., price each	1.50
80	C262606—Metal top telescope cap covers with inner cover, 10-frame, K. D., price each	1.60
3	C261601—Metal top telescope cap covers with inner cover, 8-frame, nailed and painted, price each	1.90
2	C262601—Metal top telescope cap covers with inner cover, 10-frame, nailed and painted, price each	2.00
4	C271701—Dovetailed winter cases, 8 frame with wood cover complete, nailed and painted, price each	2.75
1	C271702—Crate of 5 dovetailed winter cases, 8-frame, with wood cover, complete, K. D., price per crate	6.25
2	C492001—One and one-half horse-power Busy Bee gasoline engines. Price each	35.00
4	one-half-inch honey pumps. Price each, complete with fittings, \$7.00; complete without fittings	5.00
6	C499121—Dadant electric wire imbedders. Price, each .....	.75
80	Bee Models—The Anatomy of the Bee price, each .....	.25

100 lbs. C490561—Crate staples, $1\frac{1}{2} \times \frac{3}{4}$ inch, price per pound.....12
In addition to the above bargains we have in stock 5000 second-grade Hoffman frames standard size $9\frac{3}{4} \times 17\frac{1}{2}$, packed in cartons of 100 only which we offer at the special price of \$5.00 per hundred as long as present stock lasts. Sample sent on request.

Above prices are strictly net f. o. b. Medina, Ohio.

For Shipment from Norfolk, Va.

62 C272702—Dovetailed winter cases, 10-frame with wood cover complete, K. D., price each\$ 1.40

For Shipment from New York City, N. Y.

13 C272701—Dovetailed winter cases, 10-frame with metal cover, nailed and painted. Price, each 2.50

12 C272702—Dovetailed winter cases, 10-frame with metal cover, K. D. Price each 2.10

50 C272703—Dovetailed winter cases, 10-frame, with metal cover, K. D. price per crate of 5..... 10.00

17 C271701—Dovetailed winter cases, 8-frame, with metal cover, nailed and painted. Price, each 2.25

6 C271702—Dovetailed winter cases, 8-fr., with metal cover, K. D. Price each 2.00

45 C271703—Dovetailed winter cases, 8-frame, with metal cover, K. D., in crates of 5. Price per crate..... 9.50

56 C271803—Demuth winter cases, K. D., price per crate of 5..... 2.50

Send all orders for the above direct to The A. I. Root Company, Medina, Ohio.

INDIANOLA APIARY offers Italian Bees and Queens for following prices: Untested Queens, \$1.00 each; Tested Queens, \$1.50 each. Bees, per lb., \$2.00. Nucleus, \$2.00 per frame. No disease. Bees inspected.

J. W. SHERMAN,

Valdosta, Georgia.

BEEKEEPERS' SUPPLIES.

The kind you want and bees need. Good stock of the A. I. Root Co.'s make of goods on hand. Catalog free. Beeswax wanted.

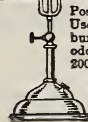
J. NEBEL & SON SUPPLY CO., High Hill, Mo.



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Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog. AGENTS WANTED EVERYWHERE.

THE BEST LIGHT CO.
306 E. 5th St., Canton, O.



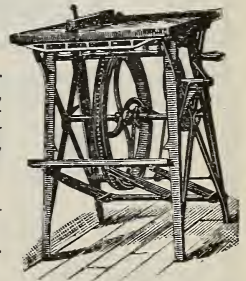
BARNES' HAND & FOOT POWER MACHINERY

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices.

W. F. & JOHN BARNES CO.
545 Ruby Street
ROCKFORD, ILLINOIS.



Special Notices by A. I. Root

Off for Florida; Artichokes.

My daughter, Mrs. Calvert and I are planning to start for Florida on election day, Nov. 7. You see I want to be sure to get in my vote in order that not only Ohio, but the United States and the whole wide world may have milk and honey instead of "beer and wine," and in order that our own beloved land as well as other lands may be "a land flowing with milk and honey," and that they may also be lands of peace and good will—lands of "peace on earth and good will to man."

Just one thing more: If any of our good Florida people can give me facts in regard to artichokes in Florida, by all means let me have them. If they get a whole bushel of tubers from a single hill of artichokes in California (see page 736), why can not we do the same thing in Florida? Address me as usual, during the winter time, at Bradentown, Fla. If you want a prompt answer, enclose an addressed postal card.

Fiftieth Anniversary.

With our next issue, Gleanings rounds out fifty years. We want the names of subscribers, if any, who have had it from "Vol. 1, No. 1," for our Jan. 1st anniversary number.

MOVED

To Larger and More Convenient Quarters.



Still Distributing

"ROOT QUALITY"

BEE SUPPLIES

Full Stocks Prompt Service

A. I. ROOT CO. OF NEW ORLEANS

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Compramos miel y cera de abejas.
Correspondencia en castellano.

PATENTS

Practice in Patent Office and Court.
Pat. Counsel of The A. I. Root Co.
CHAS. J. WILLIAMSON,
McLachlan Bldg., Washington, D. C.

If You Love Flowers Read My Special Offer

A Splendid Collection **48¢**
of Early Spring Bulbs

This is simply to introduce our wonderful stock of bulbs—just received from Holland—and to acquaint you with our service and high business standards. These bulbs are strictly first-grade stock, big, hardy. *But they must be planted this Fall.* Upon receipt of 48¢—stamps or money order—I'll send you by parcel post, prepaid, your choice of one of the following collections:

1. Half dozen delicately fragrant hyacinths, or
2. One dozen lasting and brilliant red tulips, or
3. One dozen ever popular yellow daffodils, or
4. One dozen dainty paper-white narcissus for indoor decoration, or
5. Two dozen white crocuses that peep through the ground even before the snow is gone, or
6. A mixed assortment of each.

Make your selection and order *now*. I've hundreds of other kinds, too. Also fruit, shade and evergreen trees, and bush fruits. Priced remarkably low. Free catalog.



T. J. DINSMORE, President,
The Progress Nurseries,
3302 Peters Ave., Troy, Ohio.



JUST AN HONEST MARKET FOR YOUR RAW FURS

Price List ready November 20.

I solicit your shipments with the understanding that I will either satisfy you with returns or pay all transportation and return your own goods.

GEO. E. KRAMER
VALENCIA, PA.

ONE, TWO AND THREE FRAME NUCLEI

During April, May and June, 1923, we will ship nuclei with young 3-banded Italian queens, on combs of honey and brood from our yards at Moultrie, Ga., or from Bradentown, Fla., where all queens will be reared, since here mismating is almost unknown.

Prices will be very low and will be arranged by correspondence. No diseases of any kind. No queens for sale only to our customers.

H. L. CHRISTOPHER
MOULTRIE, GA., OR BRADENTOWN, FLA.

HONEY

We just received several carloads of beautiful Honey. Roadside beekeepers and those supplying a family trade will do well to take advantage of these bargain prices:

In 60-lb. Tins—White Orange, 13c lb.; White Sage, 12c lb. Extra L. A. Sage, 10½¢ lb.

GLASS AND TIN HONEY CONTAINERS.

2½-lb. cans, crates of 100.....\$4.50
5-lb. pails (with handles) crates of 100.. 7.00
10-lb. pails (with handles), crates of 50. 5.25
60-lb. tins, 2 per case, new \$1.20 case; used 25c

WHITE FLINT GLASS, WITH GOLD LAC- QUERED WAX LINED CAPS.

8-oz. honey capac., \$1.50 per carton of 3 doz.
16-oz. honey capac., \$1.20 per carton of 2 doz.
Qt. 3-lb. honey capac., 90c per carton of 1 doz.

HOFFMAN & HAUCK, INC.
Woodhaven, New York

WE'LL SUPPLY YOU BEE SUPPLIES THAT ARE MADE TO SATISFY

Let us quote you prices
before you place your
order, and you will not
be sorry.

Illustrated Catalog
sent on request.

The best market prices
for your beeswax.

WRITE TO
A. H. RUSCH & SON CO.
REEDSVILLE, WISCONSIN

For 1923

Superior Italian

Queens

Full Colonies

Nuclei

Pound Packages

Cypress Bee Supplies

Hive-Bodies

Covers

Bottoms

Supers

Frames

*We can furnish you the best of the
above at a fair price. Let us quote you.*

The Stover Apiaries
Mayhew, Miss.

Honey Containers

We have some interesting prices to offer on honey containers; send us a list of your requirements and let us quote you our prices.

2½-lb. cans in reshipping cases of 24 and crates of 100 and 500.

5-lb. pails in reshipping cases of 12 and crates of 100 and 200.

10-lb. pails in reshipping cases of 6 and crates of 100.

1-gallon square or oblong cans with 1¾-inch screw cap in boxes of 6.

1-gallon square or oblong cans with 1¾-inch screw cap in crates of 100.

60-lb. square cans with 1¾-inch screw cap in cases of 2 cans.

16-oz. round glass jars in reshipping cases of 2 dozen.

6½-oz. tin top tumblers in reshipping cases of 4 dozen.

Shipping cases for comb honey for any style sections in the 24-lb. or 12-lb. size.

Send for our catalog showing full line of Bee Supplies.

AUGUST LOTZ CO.
BOYD, WISCONSIN.

Package Bees, Queens and Nuclei

Dollar a Pound

Package Bees a dollar a pound.
Queens accompanying, one dollar
additional.

NUCLEI—2-frame, \$3; 3-frame, \$4.
Either Standard or Jumbo Langstroth.

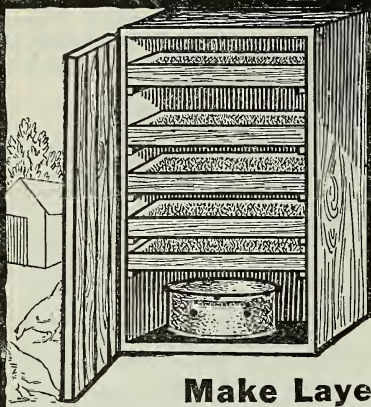
QUEENS—Untested, \$1; Tested, \$1.50.
Breeders, \$5.00, \$10.00, \$15.00.

These low prices are made on condition that orders are booked in time so we can prepare for them in the winter.

Send for circular.

LOVEITT HONEY CO.
602 N. 9th Ave., Phoenix, Ariz.

Oat Sprouter \$2⁴⁹



This home made oat sprouter was made in one evening by a fourteen-year-old boy with no tools but saw and hammer. The total cost, including stove for heating, was \$2.49. Thousands of these sprouters have been made at home by poultry keepers and hundreds of letters in my files testify that it is the cheapest to make, the easiest to operate, and the handiest and best sprouter ever built.

To make hens lay abundantly in winter you must feed growing green food that is rich in vitamins. Sprouted oats furnish the best of such food at lowest cost.

Make Layers Out of Loafers

The Putnam Home-Made Oat Sprouter will supply better and sweeter sprouted oats with less fuss and dirt and work than any other sprouter made. I will send you, free, easily followed plans for building this oat sprouter together with a full description of the Little Putnam Stove with which it is heated. The price of the stove is \$3. postpaid. Plans for building the Sprouter are packed with every stove, also instructions for using the stove to keep the water in poultry fountains from freezing.

You can't afford to be without this oat sprouter, even if you keep but eight fowls. Get a Little Putnam Stove from your dealer now. It will pay for itself many times before spring. Most dealers keep it. If yours does not, send me his name and \$2. and I will send you the stove, postpaid. Try it and if you do not find it all I claim and are not perfectly satisfied, send it back in ten days and I will refund your \$2. together with the postage for its return. I'll run all the risk.

I. PUTNAM

Route 1160-0

Elmira, N.Y.



\$2⁰⁰ Post Paid

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World's Best Roofing

at Factory Prices

"Reo" Cluster Metal Shingles V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofing, Siding, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Save money—get better quality and lasting satisfaction.

Edwards "Reo" Metal Shingles
have great durability—many customers report 15 and 20 years' service. Guaranteed fire and lightning proof.



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Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Garage Book, showing styles.


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Get our wonderfully low prices and free samples. We sell direct to you and save you all in-between dealer's profits. Ask for Book No. 183

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"Saved at Least \$20," writes W. W. Fuller, Carmi, Ill. You, too, can save by buying direct at Lowest Factory Prices. **WE PAY THE FREIGHT.** Write today for Free 100-page Catalog of Farm, Poultry and Lawn Fence, Gates, Posts and Barbed Wire.

KITSELMAN BROS. Dept. 21, MUNCIE, IND.

66—Good—\$1

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Four exits from supers. Fits all standard boards. Springs of coppered steel. Made of substantial metal. Price each 18c prepaid. Made by G. B. LEWIS COMPANY, Watertown, Wis., U. S. A. For Sale by All Dealers.

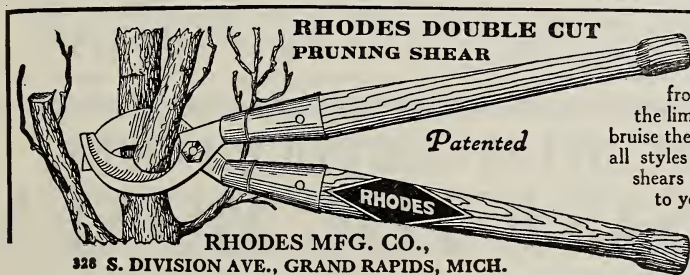
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Send for Remarkable FREE Book on the

Best All Purpose Breed

They'll make you more money than any other poultry breed. Egg laying contests show Rhode Island Reds lay more winter eggs, larger eggs, than any other breed. They mature quick begin laying early. Rhode Island Reds combine egg and meat qualities in highest possible degree. Make best market fowls. Hens make excellent mothers. Most beautiful, most popular breed today. Ideal fowl for farm or city lot. We tell you where to buy.

Rhode Island Red Journal Only Journal in World devoted exclusively to Rhode Island Reds. Tells how to make big money with them—how to buy, sell, get greatest pleasure, most profit—everything you want to know about Rhode Island Reds. Published monthly. 50c year—3 years \$1.00. "Blue Ribbon Reds" remarkable book tells how to judge, mate, cull, feed, prepare for show, linebreed, etc. Given free with 3-year subscription to Rhode Island Red Journal, at \$1.00. Send dollar bill today. Rhode Island Red Journal, 2533 Democrat Bldg., Waverly, Ia.



THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door.

Write for circular and prices.

1923--NUCLEI and A. I. ROOT BEE SUPPLIES--1923

One extra Pound of Bees With Each Nucleus and Shipped on Capped Brood.

Seventeen years of experience has taught us that a three-frame nucleus, if received before May 15, will gather a surplus crop of honey. With the extra pound of bees you are doubly assured of that fact, I would be pleased to have Beekeepers, who have become dissatisfied with pound packages and nuclei, to try our nuclei. 3-frame Nuclei of Italian Bees, with queen, \$5.00 each. 3-frame Nuclei of hybrids, with Italian queen, \$4.50 each. We guarantee safe arrival and free from disease and satisfaction.

"To whom it may concern: I have this day, Sept. 22, 1922, completed the inspection of the yards of A. R. Irish and found them free from contagious bee diseases.—S. V. Brown, State Inspector of Apiaries."

A. R. IRISH, *Nuclei Specialist*, SAVANNAH, GA., BOX 134

BANKING BY MAIL AT

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PRES.

E.R. Root
VICE PRES.

E.B. Spitzer
CASHIER

THE BEST INVESTMENT

you can make is a Savings Account with the Savings Deposit Bank Company.

It earns 4% interest, and it is always ready for you at 100 cents on the dollar when you need it. Deposits received BY MAIL.

4%

The SAVINGS DEPOSIT BANK CO.
THE HOME OF THE HONEY-BEE MEDINA, OHIO



RAISE GUINEA PIGS

for us. We buy all you raise. Big profits—largedemand—easily raised. Pay better than poultry or rabbits. Particulars and booklet how to raise FREE.

CAVIES DISTRIBUTING CO., 3145 Grand Ave., Kansas City, Mo.

"Best" Hand Lantern

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**
306 E. 5th St., Canton, O.

ROOT QUALITY SUPPLIES

BEES AND QUEENS.

Authorized Distributor for St. Louis district.
Send for Catalog.

O. G. RAWSON, 3208 Forest Place,
East St. Louis, Ill.

PATENTS --- TRADEMARKS

I offer prompt, personal and expert professional service. 10 years' experience. Write for terms. **LESTER SARGENT**, Patent Attorney, 524 Tenth St., N. W., Washington, D. C.

MASON BEE SUPPLY COMPANY, Mechanic Falls, Maine.

From 1897 to 1922 the Northeastern Branch of The A. I. Root Company.

PROMPT AND EFFICIENT SERVICE

BECAUSE—Only Root's Goods are sold.

It is a business with us—not a side line.

Eight mails daily—Two lines of railway.

If you have not received 1922 catalog send name at once.

BEE CANDY Just what you want to use when you pack your bees this fall. This candy will save many colonies that are short of stores. Put up in large paper plates just right for your hive. Send for circular and price, also catalog of supplies.

H. H. JEPSON

182 Friend Street.

Boston 14, Mass.

DON'T DELAY---GET OUR PRICES WE SAVE YOU MONEY

"falcon"

SUPPLIES --- QUEENS --- FOUNDATION

W. T. FALCONER MFG. COMPANY

FALCONER (Near Jamestown), NEW YORK.

"Where the best beehives come from."



QUEENS *Package Bees* QUEENS *Nuclei*

For years we have been shipping thousands of pounds of bees all over U.S.A. and Canada. Now is the time to place your order for spring. Send for our free 1923 circular. We can save you money by ordering early.

The Very Best of Queens and Bees.

ITALIANS — CARNIOLANS — GOLDENS.

Nueces County Apiaries
Calallen, Texas



Nov. 15 Is a Big Day

The Iowa Association is planning a series of meetings for Mid-western Beekeepers, in connection with the Mid-west Horticultural Exposition. Plan to enter an exhibit in the Exposition, for the list of cash and special prizes is one of the largest ever offered Beekeepers. Any Beekeeper who complies with the premium requirements may enter his display. And certainly, if at all possible, be in attendance at the

Mid-Western Beekeepers' Meeting

On Tuesday afternoon, a special program is being arranged for Producers. Wednesday morning Beekeepers are invited to meet with the Pomological Society, when Prof. S. H. Bailey, their president, will give an address. That afternoon the Beekeepers' Meeting will be held in the Root plant, where producers will be shown how Airline is bottled, how Airco Foundation is made, and Root Quality Goods assembled. We cordially invite all Beekeepers who will be in Council Bluffs that week, or in attendance Wednesday, to join us and the Iowa Association in a meeting of Beekeepers, and for them

A Program of Interest

Plant Inspection—1:15 to 2:00 P. M.

F. B. Paddock, Ames, Iowa—"What is the Future of Beekeeping in the Mid-West?"

W. A. Jenkins, Shenandoah, Iowa—"Sweet Clover in the Middle West."

H. C. Cook, Omaha, Nebr.—"Selling Honey Profitably."

W. A. Walker, President of the Iowa Beekeepers' Association, Iowa Falls, Iowa—"The Association's Relationship to Better Beekeeping."

General Discussion—Led by Chas. Gaydou, Secretary of the Nebraska Beekeepers' Association, Blair, Nebr.

Refreshments.

H. H. Root, Medina, Ohio—Subject, "The Greatest Menace to Beekeeping."

RESERVE THE DATE AND JOIN US WEDNESDAY, NOV. 15, 1922.

Premium lists of honey and cash and cash prizes will be sent upon request.

**THE A. I. ROOT COMPANY OF IOWA
COUNCIL BLUFFS, IOWA**

NEW PRICES

On Friction Top Cans and Pails

	25	50	100	200	500	1000
2½-lb. cans	\$1.15	\$2.15	\$4.10	\$7.75	\$18.75	\$36.00
5 -lb. pails	1.90	3.50	6.50	12.00	28.25	55.50
10 -lb. pails	2.75	5.00	9.50	18.00	43.00	83.00

All packed in fibre containers. They keep neat and clean till you use them.
Prices F. O. B. cars Lansing and not from some distant shipping point.

Send in Your Order

1-Pound Round Jars

White glass and lacquered screw caps packed in re-shipping cases of 24 each. Priced as follows:

Each	\$1.30
10 Cases	12.00
50 Cases	57.50

F. O. B. cars, Lansing, Mich.

6-Ounce Tumblers

White glass and lacquered slip-on caps. Packed in re-shipping cases of 48 each. Priced as follows:

Per Case	\$ 1.45
10 Cases	14.00

F. O. B. cars, Lansing, Mich.

2-Pound Round Jars

White glass and lacquered screw caps. Packed in re-shipping cases of one doz. each. Priced as follows:

Per Case	\$ 1.20
10 Cases	11.50
25 Cases	27.50

F. O. B. cars, Lansing, Mich.

A Grade Tin Paste

Just what you want for attaching labels to tin and glass containers. It sticks. Prices as follows:

One Pint .....	.25c
One Quart .....	.45c
One Gallon	\$1.50

Postage extra.

Remember, IT STICKS.

Send in Your Order

M. H. HUNT & SON

510 North Cedar Street

LANSING, MICHIGAN

An Open Letter to the Honey Producers of the United States

Costs entering into the manufacture, sale and distribution of Lewis "Beeware" on which our 1923 prices will be based would, in any other year, have prompted an increase in price over 1922.

Realizing that honey is largely produced by agriculturists, we know that the selling price of your product has decreased since last year, in the face of rising costs to you of many manufactured goods you use in the pursuit of your business.

For that reason we are going to be satisfied for 1923 with a smaller profit than is ordinarily due us in the course of business, and not make any material increases in the 1923 catalog, absorbing some losses ourselves for the present.

It is our hope that lumber, which has increased nearly 30 per cent since 1922 prices were figured, will not keep on climbing in price. Labor in our plant has been reduced as much as possible under existing circumstances, and we have installed every device known to mechanical science to reduce our manufacturing costs.

Should lumber and our other costs continue to rise, an increase in the retail price of Lewis "Beeware" will be necessary some time during 1923. This will be avoided if physically possible. There is now not the slightest indication of any possibility of price decrease during the coming season, so far as we can see. Of course we expect to pass on such opportunities to our patrons when possible.

We are heartily in favor of co operative buying where a stock of goods is kept on hand and dealer service given. To that end associations buying in carlots will be made carlot prices. The cost of distribution to us makes it impossible to allow large discounts for purchase of less than carlots without an increase in the retail prices for 1923, which would be unfair to the great body of beekeepers who buy direct from our branches or dealers.

We will continue, as in the past, to do everything within our province to further beekeeping, increase honey production and honey selling opportunities, to appear before the Classification Committee for lower rates on honey, to contribute to the financial welfare of National and State Associations and to keep up the quality of "Beeware" so it will continually be worth more than it costs.

Would you like to receive a free copy of the 1923 Beeware Catalog? If so, drop us a post card.

G. B. LEWIS COMPANY

G. C. LEWIS, President.

At the Home of "Beeware,"
Watertown, Wisconsin, U. S. A.
November 1, 1922.



Why 1923 Will Be a Root Quality Year!

Since time immemorial, it has been demonstrated by countless examples that he who best serves his fellow man will, in due time, receive his just reward.

For the past fifty years The A. I. Root Company has been serving beekeepers in all parts of the world. By giving honest service and honestly made goods of high quality, The A. I. Root Company has won the esteem and good-will of thousands of beekeepers everywhere. This good-will on the part of their friends, the beekeepers, *is the greatest asset which The A. I. Root Company possesses.*

We intend to keep this good will intact during 1923!

With this end in view we have made but very little change in our prices for 1923. Although lumber prices are much higher, and are still advancing, we are keeping our prices down to last year's level wherever possible. We are able to do this because we were fortunate in having purchased considerable of our lumber for 1923 at a price lower than we would have to pay today. We are passing the advantage of this saving on to the beekeeper today, but we cannot guarantee these prices to last through the entire season.

The few slight increases that have been made are offset by the reductions on items such as sections, extractors, etc. The increased demand for Root sections and extractors has enabled us to reduce production costs because of the increased volume.

Production costs throughout the whole Root organization have been reduced to a minimum. Other expenses have also been cut down considerably. It should be borne in mind, however, that material costs form a large part of the total cost of goods, therefore, any severe upward fluctuation in lumber or material costs will necessitate advances in prices later in the season. Such advances, according to present indications and the recovery of business in general, are entirely possible.

The A. I. Root Company always has used and always will use its influence and every means at its disposal to further reduce freight rates on both honey and beekeeping equipment. This, of course, will be the policy for 1923.

The A. I. Root Company is also making greater efforts than ever before, not only to popularize the universal use of honey as a safe sweet, but to aid the beekeeper and honey producer in every way possible to dispose of his honey at the best market prices. This service is rendered through the Company's books and publications which rank the very highest of any in the world on bees and beekeeping subjects. An example of this service is the new free booklet recently published, "How to Sell Honey." It is yours for the asking. Have you secured your copy? If not, drop us a postal card today. Also ask for a copy of the handsome new 1923 catalog which will be ready in a few weeks.

THE A. I. ROOT COMPANY
WEST SIDE STATION, MEDINA, OHIO

"Fifty-two Years in the Bee Supply Business."